Foodborne Outbreak Simulation Exercise
Exercise Report

Commissioned by: Food Safety Authority of Ireland

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EXECUTIVE SUMMARY

The *E. coli* O104 outbreak identified in Germany in May 2011 resulted in a total of 852 hemolytic-uremic syndrome (HUS) cases and 54 deaths. It was a stark reminder of the potential severity of disease associated with VTEC infections and the magnitude of outbreaks that can result from contamination of food produced and distributed on a large scale. As part of improving its response to dealing with the consequences of a microbiological hazard contaminating the food chain, a draft working document 'Management of Outbreaks of Foodborne Illness' was produced by a cross-agency, multidisciplinary working group (facilitated jointly by the Food Safety Authority of Ireland (FSAI) and Health Service Executive (HSE)) to provide guidance for the way outbreaks are managed in Ireland. The procedures in the protocol are intended to ensure prompt action to: recognise an outbreak of communicable disease, eliminate the source and stop further spread, prevent recurrence and ensure satisfactory communications between all concerned. In tandem with the launch of the protocol, the FSAI and the HSE organised an outbreak simulation exercise - Exercise Clea - to test it. This report reviews the simulation exercise and provides recommendations to better prepare Ireland's response to foodborne outbreaks. The main aims of the exercise were to rehearse: multi-agency interaction in the context of the protocol, assess the fitness for purpose of the protocol, practice and review communication exchanges, and review the timeliness of the response.

The exercise was based on a fictitious national outbreak of a foodborne illness and involved over 200 participants in Government food/health agencies, laboratories and local authorities across the Republic of Ireland. The lead client and exercise sponsor was the FSAI. The scenario of the exercise involved a developing situation that occurred as a result of a crop of lettuces becoming contaminated with *E. coli* O157:H7. The implicated farm supplied the lettuces to supermarkets, national processors who make high-end mixed salad products, catering/food service companies, hotels and farmers' markets across the country and through its own farm shop. The exercise involved agency teams working within a fully simulated environment, reacting to events as the scenario unfolded, and provided the opportunity for participants to explore interactions with the public, media communication channels, Government and industry.

Overall, it was felt that all those who participated in the exercise had a good awareness of the draft outbreak protocol and understood their role, and that of the FSAI and other agencies, as part of the response. Following a review of the exercise and associated stakeholder feedback, a number of issues were identified and recommendations for improvement made. The main issues identified in the exercise included:

- Clarify how and when outbreak investigations are escalated and the role and format of scoping meetings before an outbreak control team meeting
- Clarify the role of the FSAI and the HSE responding to media queries during outbreaks
- Review teleconference facilities and procedures for outbreak meetings
- Review how information is shared between the agencies and professional groups involved
- Establish local versions of the national protocol and clarify geographical regions for different health professions in the protocol.

INTRODUCTION

1.1. PURPOSE OF THIS REPORT

The purpose of this report is to provide a summary of the output from Exercise Clea, which took place on the 19th September 2012. Exercise Clea was undertaken to examine the fitness for purpose of the draft working document the 'Management of Outbreaks of Foodborne Illness' protocol, the production of which was facilitated jointly by Food Safety Authority of Ireland (FSAI) and the Health Service Executive (HSE) and a cross-agency, multidisciplinary working group. The exercise was based on a fictitious national outbreak of a foodborne illness and involved participation from Government food/health agencies, laboratories and local authorities across the Republic of Ireland (RoI). The lead client and exercise sponsor was the FSAI.

1.2. ROLES AND RESPONSIBILITIES – EXERCISE DESIGN AND DELIVERY

1.2.1. CLIENT WORKING GROUP

The client working group was made up of representatives of the cross-agency group who had developed and consulted on the new 'Management of Outbreaks of Foodborne Illness' protocol. The protocol is designed to support the interaction of local/national outbreak control teams (OCTs) when faced with outbreaks of foodborne illness and its use and validation was a key objective of the exercise.

The working group comprised senior representatives from the following agencies:

- FSAI – Eibhlin O'Leary and Ray Ellard
- HSE (PH) – Margaret O'Sullivan
- HSE (EHS) – Ann Marie Part and Niamh McGrath
- HSE (PHL) – Eleanor McNamara
- HSE (HPSC) – Paul McKeown

In the context of Exercise Clea, the working group's responsibilities were as follows:

- Host all project planning meetings
- Agree exercise aims and objectives
- Provide expert knowledge to aid scenario design
- Facilitate contacts with pan-agency colleagues to aid scenario research and other pre-exercise communication
- Agree final exercise design, all information injects and supporting data
- Provide physical facilities for exercise control area and Dublin based exercise meetings
- Agree exercise logistics, e.g. meeting areas, IT/telephony requirements, subsistence etc
- Participate variously in exercise delivery:
  - Observers – FSAI/HPSC/EHS
  - Specialist Advisors – EHS
  - Control Players – PHS/PHL
- Agree/sign off post - exercise survey review process and report (this document)

1.2.2. STEELHENGE

Following a public tendering process the contract was awarded to Steelhenge Consulting which is a London based contractor specialising in the design and delivery of crisis management simulation exercises. Exercise Clea is its first engagement with the FSAI and its official agencies – it has previously worked for FSA UK, FSAS, FSA NI and EFSA.

In the context of Exercise Clea, Steelhenge's responsibilities were as follows:

- Provide suitable resource to design the exercise
- Draft exercise aims and objectives
- Compose all exercise design materials – outline scenarios, information injects and supporting data
- Engage other stakeholders in the wider RoI health/food community, to aid the exercise design process
- Deliver exercise providing suitable resources according to scenario requirements – nine consultants were variously engaged in exercise management, simulated role play and observation
- Compose post exercise survey review and accompanying report (this document)

1.3. EXERCISE OVERVIEW

This is the first such exercise undertaken by the FSAI and its sister agencies. The scenario was based upon an *E. coli* contaminated salad vegetable. The vegetables, iceberg lettuces, were distributed across the RoI through a number of consumer supply chains (retail, school, hotel, hospital etc) resulting in severe sickness and in two cases, fatality.

1.4. EXERCISE AIM

The aim of the exercise was to:

"Maximise preparedness of official agencies – the FSAI, HSE and other key stakeholders - on how to respond to a potential or actual outbreak of foodborne illness."

Caveats:

The exercise was organised to rehearse the protocol and the official agencies response to an outbreak. It did however have some significant limitations in that it did not rehearse the impact of a surge in demand on resources such as staff, facilities etc. The implications of a large-scale outbreak on other routine work could not be assessed. In addition, the exercise did not include any real inspections, sampling or testing. Interviews with patients, food business operators, media etc were simulated by phone.

1.5. EXERCISE OBJECTIVES

The objectives of the exercise were to:

- Rehearse multi-agency interaction, in the context of the cross agency outbreak control protocol, responding to an outbreak of foodborne gastroenteritis

- Identify and evaluate lessons learned in respect of compliance with the protocol, to assist in further procedural and process development
- Practice the required wider communication pathways to all relevant internal and external stakeholders
- Review and evaluate the timeliness of response

1.6. FORMAT OF THE EXERCISE

The exercise involved agency teams working within a fully simulated environment, reacting to events as the scenario unfolded and provided the opportunity for participants to explore interactions with the public, media communication channels, Government and industry. Whilst it is appreciated that in reality, incidents of the nature chosen for the scenario run for a number of days, weeks or months, in order to minimise the disruption to business as usual and prevent the requirement for even more investment of resource time and effort, a decision was made to hold the exercise across one day. This artificially short time-frame did however condense activities and placed an extra challenge on frontline individuals making key decisions and responding to information.

However, in the case of a small number of players, information was received during the two-day period prior to 19th September, e.g. laboratory sample requests for testing, whilst the information provided was not actionable, it was provided to better mimic reality, in terms of a crescendo of events leading towards the main exercise day.

1.7. EXERCISE PARTICIPANTS

The table below lists all the participating agencies (players/control players), in conjunction with those entities who were not engaged and hence simulated by the facilitators (EXCON role players).

For clarity, a 'player' is defined as someone who participated in the exercise with little or no prior knowledge of the scenario (other than knowing it was based on an *E. coli* outbreak) and hence reacted as if they would for a real incident, making and implementing decisions, utilising resources etc. A 'control player' however does have awareness of the scenario in advance and is responsible for providing information to other players, whether scripted at pre-set times, e.g. lab test results, or responding with advice/guidance/further information where ad-hoc requests for information are received. In the case of Exercise Clea, there was only one control player, which was a senior representative from Cherry Orchard PHL, who was situated with the facilitators in EXCON.

Agency	**Status**
Food Safety Authority of Ireland	Players
Health Service Executive – Department of Public Health (regions various)	Players
Health Service Executive – Environmental Health Service (regions various)	Players
Health Service Executive – Health Protection Surveillance Centre	Players
Cherry Orchard Public Health Laboratory	Control Player

Agency	Status
Other Public Health Laboratories	Players
Department of Agriculture, Food and the Marine	Players
Sea Fisheries Protection Agency	Players
Department of Health & Children	Players
Local Authority Veterinarians	Players
Food Standards Agency (UK and NI)	EXCON role players
Non-RoI Governmental bodies, e.g. European Commission	EXCON role players
Hospital Consultants	EXCON role players
General Practitioners	EXCON role players
Food Business Operators (including schools, hospitals and hotels)	EXCON role players
Trade Associations	EXCON role players
Consumers	EXCON role players
Media	EXCON role players

1.8. SUPPORTING DELIVERABLES

In order to enable the successful delivery of Exercise Clea, the following supporting materials and infrastructure were designed and developed:

- Stakeholder briefing - A formal briefing was provided for those organisations which it was anticipated would participate,
- Exercise Clea FAQs - This briefing document was composed to introduce stakeholders to the exercise,
- Scenario timelines - In order to ensure that the exercise scenario was realistic, a detailed scenario timeline was constructed. This mapped the exercise inputs against the anticipated outputs to ensure the exercise objectives were met,
- Scenario back-story - In order to ensure that the scenario seemed realistic in terms of events leading up to the main exercise day, a back-story was constructed. This spanned a number of days and included activities that ensured a relatively rapid escalation to OCT level on the day of the exercise. Exercise participants were not initially privy to the back-story information. Details became more apparent as investigations were made by the DPH/EHS players,
- Distribution maps – As befits a food-related incident, certain agencies are required to conduct detailed traceability activities, as part of their investigations into where the contamination started and where the product(s) were then distributed to. As much of this

information as possible was therefore replicated using fictitious company names and addresses, laboratory results and distribution data,

- Patient information - In order to assist the HSE with their investigations, fictitious public profiles were composed which included fictitious names and addresses, GPs, fictitious laboratory results and food histories,
- Communications directory - In order to ensure that only those participants who had agreed to play during the exercise were contacted, a communications directory was developed and circulated prior to the exercise,
- Observer guidance notes - In order to ensure that observers were monitoring the response in the context of the processes and procedures defined in the 'Management of Outbreaks of Foodborne Illness' protocol, observers were provided with a series of questions and criteria to assist them with their analysis of the response,
- Media materials – A combination of materials was prepared in order to accurately represent the media engagement element of the scenario. These comprised:
  - Pre-recorded media news clips – played into the scenario at pre-determined intervals
  - Twitter feeds – also played into the scenario at pre-determined intervals
  - SVN24 (website) – an exercise-specific website which mimics digital news feeds (and hosted the media clips referenced above)
- Exercise email account – an exercise-specific communications portal (gmail) which enables:
  - Facilitators who are simulating non-playing parties (hospital clinicians, for example) to correspond under an assumed identity
  - The provision of a generic receiving email address (a 'response cell') to assist the facilitators in monitoring the actions/communications being undertaken.

1.9. MONITORING

A monitoring scheme was designed against the 'Management of Outbreaks of Foodborne Illness' protocol. External observers were located at the FSAI offices in Dublin and were able to monitor activities, meetings and teleconferences. Members of the Exercise Clea working group also acted as observers for their departments and in some instances agencies nominated internal observers to monitor the response of their organisation. It was not practical for observers to be located in the offices of all participating departments/agencies. Instead, a dedicated exercise email address was established for the duration of the exercise, with this address copied on all email correspondence between exercise participants. This enabled exercise facilitators to monitor activities and communications during the exercise for the purposes of analysing this against the aim and objectives, as well as controlling the pace and flow of the exercise.

1.10. FEEDBACK AND EVALUATION

At the conclusion of the exercise, an initial feedback session was conducted with the working group, in order to capture their immediate feedback on the response. This feedback was combined with the comments provided by observers and exercise facilitators and was centrally collated.

All those involved in the exercise (players, observers, advisors or otherwise), were invited to complete an online survey in relation to the exercise. Edited feedback from the survey has been

included within this report, with 106 people out of approximately 200 people invited to respond, providing feedback via this method.

The feedback provided by exercise observers, exercise controllers, controlled players and exercise participants, as well as informal discussions which took place between Steelhenge and exercise stakeholders during the planning stages and after the exercise took place, were collected and considered against the following criteria:

- Frequency by which the issue was raised
- Number of people and/or organisations that raised the issue
- Which representatives raised the issue, i.e. observers, controllers, participants

1.11. ACHIEVEMENT OF EXERCISE OBJECTIVES

The table below refers specifically to the achievement of the exercise objectives, not the performance of participating agencies with findings and recommendations arising. The Findings and Recommendations section of the report commences on page 12.

Objective	Met	Evidence
Rehearse multi-agency interaction, in the context of the FSAI's cross-agency 'Management of Outbreaks of Foodborne Illness' protocol, responding to an outbreak of foodborne gastroenteritis	✓	The exercise variously engaged the following: • FSAI • DoHC • HSE – PHS • HSE – EHS • HSE – PHL • HSE – HSPC • SFPA • DAFM • LAVS The exercise included a local OCT meeting/telecon and latterly a national OCT meeting/telecom. The facilitators used a specific email repository in order to monitor communications between different agencies. 200 such emails were received variously recording actions, decisions, directives, information requests and other communications. 76% of respondents to the online survey acknowledged some reference/use of the 'Management of Outbreaks of Foodborne Illness' protocol.
Identify and evaluate lessons learned in respect of compliance with the protocol, to assist in further procedural and process development	✓	There was a significant level of useful feedback derived from both observers, players and other exercise advisors, whether through the survey tool (106 respondents), other written submissions or more anecdotal methods in respect of protocol compliance. A key requirement of the exercise was to rehearse the protocol in its entirety, as far as was practicable. The inputs developed generated the expected output of an OCT meeting and

Objective	Met	Evidence
		subsequent cross-agency communications. Findings and recommendations are addressed in a subsequent section of this report. Further procedural and process improvement is obviously a longer-term activity and will be considered by the Working Group on publication of this report.
Practice the required wider communication pathways to all relevant internal and external stakeholders	✓	There were significant levels of interaction between all represented agencies and other (role-played) stakeholders, e.g. HSE – PH, HSE – EH, laboratories, hospitals, food businesses, international agencies, media, members of public etc. This was enacted for the most part through emails, telephone calls, teleconferences and in the case of the media, interviews and a press conference.

1.12. PARTICIPANT FEEDBACK

Participants were provided with the opportunity to feedback under a number of headings through the online survey. This included their views on the exercise delivery, in the context of its aims and objectives. Notable findings can be seen below, preceded by the make-up of the survey respondents, in the interests of context. It should be noted that 106 participants undertook the survey out of an approximate total of 200 engaged in the exercise.

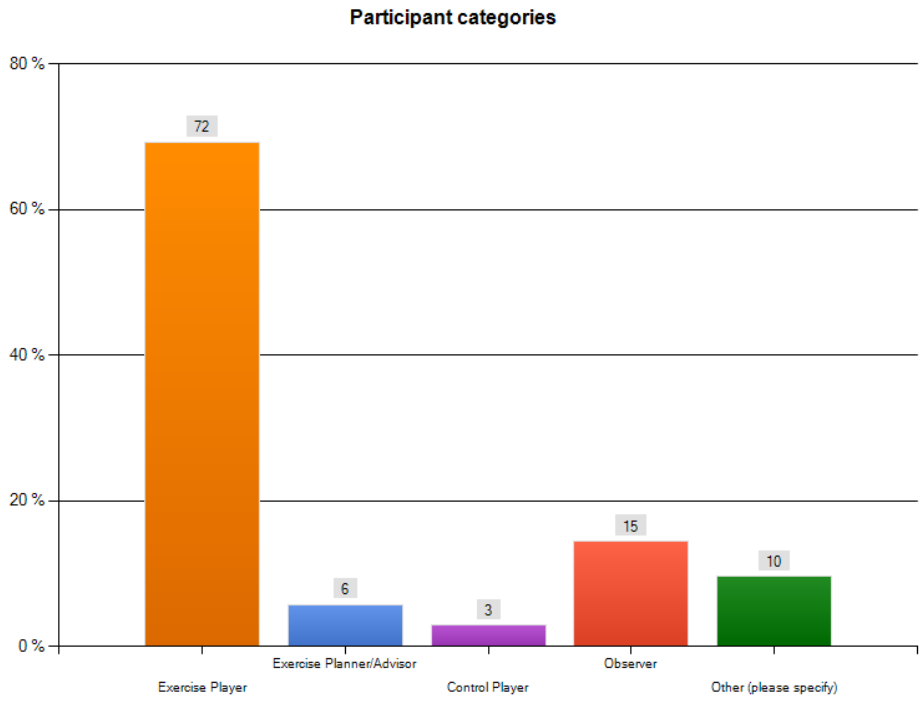

Figure 1 – Distribution of participant categories in Exercise Clea

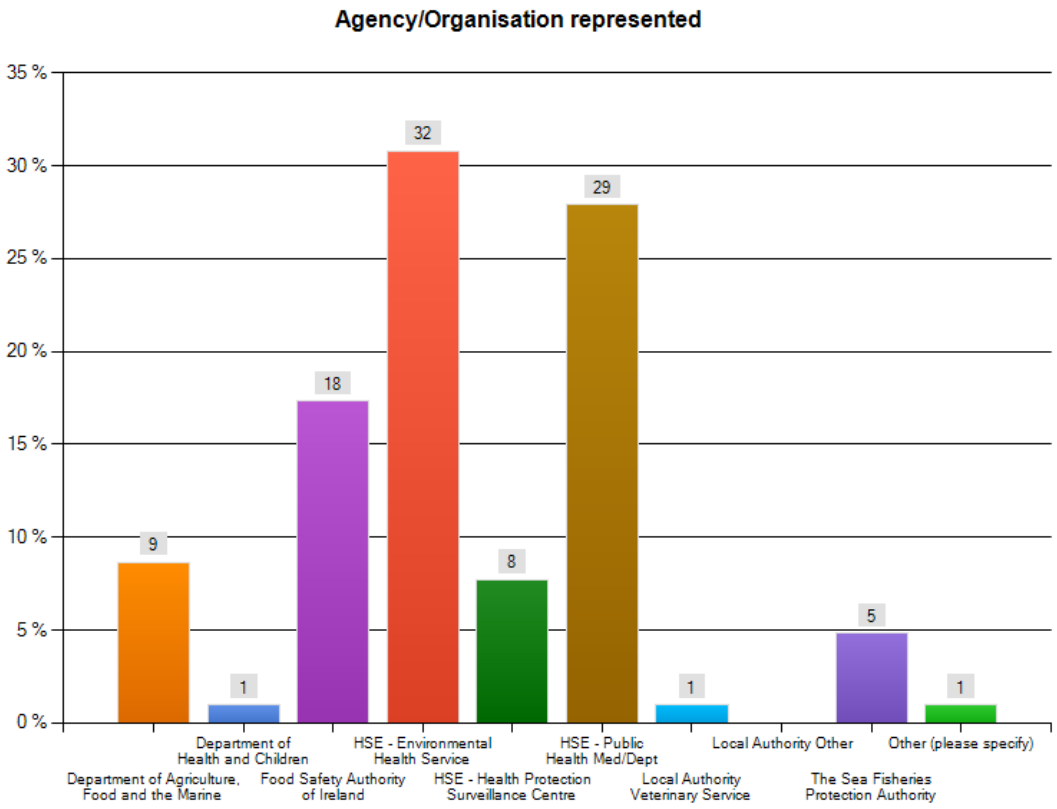

Figure 2 – Distribution of agency/organisation categories in Exercise Clea

1.13. FEEDBACK HEADLINES

95% felt the objectives of the exercise were clear.

69% felt that the exercise had wholly or partially met those objectives.

79% reported that the scenario was wholly or partially realistic.

63% stated that they were provided with enough information, wholly or partially, to support their response.

70% said the 'Management of Outbreaks of Foodborne Illness' protocol was an effective tool and assisted their response.

77% felt the exercise helped develop future capability to some degree.

68% came away with some key learning points.

FINDINGS & RECOMMENDATIONS

The following table presents the findings and recommendations identified from the exercise against the key stages outlined in the 'Management of Outbreaks of Foodborne Illness' protocol, commencing at Chapter 2 – Organisational Arrangements.

The findings are based on the evidence that was available to the facilitators through direct observation, for agencies where this method of critique was employed, and email correspondence, where such correspondence was copied to the facilitators. All observations and opinions stated are those of Steelhenge, unless specifically attributed otherwise.

Once a recommendation has been agreed, an action plan should be implemented which includes timescales for delivery and an appropriate owner. It should be noted that not all findings will necessarily result in an accompanying recommendation, in so far as a change in process or protocol is required. Sometimes it is just a case of further practice and application of learning during live incidents. On publication of this report, the outbreak protocol will be considered by the working group to review recommendations made. Any changes to the current working draft will be agreed by the cross-agency group who agreed the protocol.

Finding/Evidence of Finding	Recommended Action
1.14. ORGANISATIONAL ARRANGEMENTS (CHAPTER 2)	
1.14.1. OUTBREAK CONTROL ARRANGEMENTS (2.2)	
Outbreak Control Plan (local): Although pre-existing plans and arrangements were used locally, there was no evidence of local outbreak control plans having been composed or utilised, based on the main 'Management of Outbreaks of Foodborne Illness' document. We would imagine this is as much a consequence of the short lead-time since the protocol was issued and the exercise and the understandable objective to validate the protocol before using it as a base for truncated local versions.	All participating agencies should supplement the 'Management of Outbreaks of Foodborne Illness' protocol with a reviewed local version once all core changes have been implemented to the outbreak protocol.

Finding/Evidence of Finding	Recommended Action
Criteria for convening an Outbreak Control Team: While there was no evidence of a scoping meeting or teleconference being undertaken before the local OCT was convened we were not privy to the rationale of going straight to a local OCT, and the condensed artificial timeframe made matters difficult for the local team. But it is possible that the evidence presented to this health region was considered sufficiently severe as to warrant this more immediate escalation – see follow-on observations however re 'national vs local' in *OCT up scaling (2.2.2)* in Section 1.14.3. The decision to convene a local OCT was certainly justified in terms of the stated Management of Outbreaks of Foodborne Illness criteria (as follows), many, if not all, of which would have been met when an outbreak was first suspected - against those below which we believe were met according to the scenario. • Immediate health risk to the public • Disease is important in terms of severity or propensity to spread • There is the potential for an identifiable point source • Widespread distribution of cases without obvious point source • Public or political concerns • A medical officer of health, or a health officer on the advice of a medical officer of health shall agree to convene an OCT From the perspective of which agency informed which other agency of the local OCT convening it appears from the information available in the control centre that the outbreak protocol was not followed. The HSPC was informed by the PHS (NE region) and the HSPC, in turn, informed the FSAI, on the basis that the outbreak had already shown clear evidence of being foodborne. It is not clear, if/how the relevant PEHO was involved in this notification process.	The protocol should clarify: • How and when local OCTs are escalated • The role and format of scoping meetings Consideration should be given to a pre-OCT scoping meeting, to allow for: • Coverage of some of the initial assessment and first actions required within a more defined group of participants • Consideration as to whether a local vs national OCT is required

Finding/Evidence of Finding	Recommended Action
1.14.2. MEMBERSHIP OF OCT (2.2.1)	
1st OCT (local): The core composition of an OCT is: • SPHM • PEHO • Consultant Clinical Microbiologist (CCM) • Administrative support The SPHM, PEHO and admin support roles were clearly in evidence from the meeting minutes (issued at 13.37). It is unclear to us whether a CCM was present. Also present were: • FSAI • PH (Navan) • EHS (DNE) • HPSC • HSE Communications • Cherry Orchard PHL • DAFM The chair of this OCT was the Director of Public Health NE region, which was appropriate given the information known at that point in time.	

Finding/Evidence of Finding	Recommended Action
The general management of this local OCT was difficult in view of the significant amount of early information being relayed over very short time intervals resulting in a very challenging chairing role: • Multiple representatives were present from many of the attending agencies, 28 in total, resulting in a laboured meeting with individuals struggling to be heard • Related to the above, the sheer weight of numbers contributed to a meeting duration of just over 1.5 hours, which delayed many participants in turning decisions/directives into tangible actions and communications • Vast volumes of information were directed at the chair of the meeting during the course of the telecom some urgent and some trivial • There was no evidence of an OCT agenda (sample TOR - Appendix 6 of the 'Management of Outbreaks of Foodborne Illness' protocol) to guide the progression of the meeting • Difficult telecon etiquette – late signing on, lack of awareness of who's who, prevarication/tangential debate – all variously disrupting the agenda • Stakeholder prioritisation – there was much focus on supply chain/source of infection issues, to the detriment of consumer/public/trade association engagement • Some members found both the teleconferences to be impersonal and counter-productive, losing the dynamic associated with in-person meetings.	In the first instance, the working group needs to revisit exactly what the purpose and role of the OCT is, i.e. is it to be regarded as a fast-moving vehicle with which to identify issues, assess impact and devise strategies accordingly, or/and equally as much to share information across a broader audience which inevitably slows the meeting dynamic. Either way, there needs to be more specific and enforced rules around numbers of agency representatives participating – all those doing so must have a defined remit, not merely so they can 'hear it from the horse's mouth'. A system needs to be put in place to organise incoming information, particularly in the event of large-scale incidents. Only urgent information should interrupt the agenda of the meeting. The protocol needs to emphasise: • Agenda compliance • Introductions • Teleconference etiquette Similarly there needs to be more rigorous compliance with the agenda, including an introductory who's who and a polite reiteration of the rules of engagement necessary with high user volume teleconferences, e.g. speaking in turn, staying specific to the point of the moment etc – one simple addition might be the use of an initial agenda point marked 'urgent matters', i.e. those which must manifest in some decision/action etc in the first 10-15 minutes, usually in the first instance those which relate to containment or damage limitation – also those where other non-participating colleagues are awaiting instruction or sign off e.g. media statement release. In relation to the last point, it might assist matters by implementing a stakeholder map or checklist, to act as an aide-memoir for different entities – this may help in maintaining a balance of activity between operational and reputational issues.

Finding/Evidence of Finding	Recommended Action
2nd OCT (national): A designated agenda was adhered to throughout and the overall structure and etiquette of the meeting was generally well organised. The published start time of the OCT changed from 3.30pm to 2.30pm – this was not broadcast universally, resulting in exclusion of some areas. An FSAI communications representative was absent - a significant omission considering the level of media engagement.	• The start time of the meeting should be broadcast well in advance and any changes communicated clearly to all relevant parties. • The role and number of participants on an OCT teleconference should be clarified. • Teleconference etiquette needs to be considered further in the protocol. • Decisions and action points should be documented. • The OCT should agree by consenus or majority on how to proceed with actions. However any decision of the OCT cannot supersede the individual statutory responsibility of an authorised officer.
Resources for the OCT (also **Appendix 7** in the 'Management of Outbreaks of Foodborne Illness' protocol): *Administration* – visibility of supporting colleagues beyond the FSAI/HSPC players was not possible for the exercise organisers, but there was nothing to suggest that any regional teams struggled through lack of personnel or equipment in this area – if anything, some teams may have been better equipped than they might expect in a real incident having been forewarned that Exercise Clea was taking place. Only specific observation is the FSAI boardroom telephone, which was inadequate for use as a speakerphone with a large number of attendees. *Sampling Kit* – as the exercise did not involve 'live' sampling or food business inspections, the availability and usage of sampling kits was outside the scope of the exercise.	• Ireland needs an outbreak telephony system that allows for a more structured, efficient and effective operation of teleconferences. Agencies need to review and upgrade their telephony infrastructure if necessary. • Consideration should be given to providing a central email portal allowing OCT members to have access to activities relating to the outbreak.

Finding/Evidence of Finding	Recommended Action
1.14.3. OCT UP SCALING (2.2.2)	
There was general consensus that a local OCT should upscale to a national OCT as soon as the need is suspected as per Outbreak protocol.	The protocol and local OCT agenda needs to accommodate a formal review point of whether the scale of the OCT meeting in progress is appropriate, and if not, to consider up scaling as per protocol.
Whilst not strictly speaking an OCT up-scaling issue, it is nonetheless relevant to record uncertainty from some organisations as to how the incident was classified as a whole, more specifically whether it was defined as a 'crisis' and hence whether the 'Interagency Protocol for the Management of a Food Crisis' (IPMFC) should have been utilised, whether alone or in conjunction with the 'Management of Outbreaks of Foodborne Illness' protocol.	Clarity is required for all relevant agencies, as to what the trigger points are for the use of the (IPMFC), what additional protocols this may bring about and whether there is scope for amalgamating the documents. This should be reviewed in the 'Management of Outbreaks of Foodborne Illness' protocol.
1.15. THE INVESTIGATION AND CONTROL OF AN OUTBREAK (CHAPTER 3)	
1.15.1. OVERVIEW - PRINCIPLES OF OUTBREAK MANAGEMENT (3.1)	
Communication: • Generic questionnaires were utilised by the EHS throughout the exercise when engaging role-playing members of the public and FBOs • The communication channels and contact lists required, were in essence, provided in the form of the exercise communications directory. The directory was well received and observations were made by a number of players suggesting its full time adoption would be a useful asset for the 'Management of Outbreaks of Foodborne Illness' protocol	• Consider the implementation of a national pan-agency communications directory – ownership, maintenance, access etc all needs to be factored in. One option is an electronic shared area (Microsoft Sharepoint for example) where users are responsible for their own updates.

Finding/Evidence of Finding	Recommended Action
• The FSAI engaged DAFM appropriately as the potential range of foodstuffs became apparent at the outset of the exercise. In the case of the FSAI however, they became initially aware of the outbreak potential from their communication colleagues. Whilst this may have been a consequence of the compressed exercise timings and early media-led inputs, it demonstrates the need for efficient information sharing between agencies at the earliest possible juncture. • The FSAI advice-line was utilised as a conduit for both food and health-related public enquiries. There was evidence within the FSAI of attempts to up-scale resources to effect a good service in this respect. But the response would have benefitted further from greater clarity of roles and responsibilities between the HPSC and the FSAI.	• Information provided to the public or industry by the FSAI or the HPSC should be shared with all OCT members immediately. • Clarity between the HPSC and the FSAI on the use of public advice lines in such an outbreak is required.
Records: • There was no evidence of a centrally owned action log including telecons, emails etc. There were minutes of the first local OCT only and this was provided as two separate accounts by the FSAI and HPSC respectively, the former clearly stated as an intra-agency document and recording only the issues and actions specific to the FSAI's involvement • There was evidence of individual action logs however from the FSAI, HPSC, DAFM and DPH South-East. In the case of the FSAI, this comprised two different templates for technical and non-technical actions, which could easily be amalgamated into one.	• Consider the implementation of a shared area portal, e.g. Microsoft Sharepoint, which could also encompass a central action-logging element, for rapid and comprehensive dissemination of actions/communications and other status-type information, both to OCT participants and those who are not (but may become) involved if an outbreak spreads. Confidentiality regarding patient information and inspection details would have to be considered. • FSAI – amalgamate technical/non-technical action logs.
Confidentiality: Confidentiality aspects were handled in keeping with the principles outlined in the Outbreak Document. The content and timing of publicly provided information, whether through advice-lines or media channels was suitably cautious.	None

Finding/Evidence of Finding	Recommended Action
1.15.2. OUTBREAK MANAGEMENT (3.2)	
1.15.3. 1: PRELIMINARY INVESTIGATION	
The OCT clearly met the core objectives of *Preliminary Investigation* in terms of case numbers, epidemiologically linkage (established quickly through patient trawling, sample taking and laboratory test initiation/receipt) and outbreak status at the point in time of the exercise.	None
Outbreak code: An outbreak code was agreed and assigned early in the scenario, although this was to an extent led by the facilitators as a result of pre-conceived sample testing requests, which already recorded a generic 'Clea' code.	None
Initial case interviews: This element of the exercise was conducted efficiently by the regional EHS players, who reacted quickly with the implementation of trawling questionnaires (5) to establish initial demographics, case histories, consumption etc. as far as the exercise scope permitted.	None
Case definition: A case definition was compiled and distributed by the HPSC, covering the common elements identified, e.g. clinical symptoms, probable vs possible etc. NB - our first sight of this was 2.17pm – it may be that circulation had been undertaken well before this time.	None

Finding/Evidence of Finding	Recommended Action
Systematic case interviews: This activity, as an extension of the initial case interviews, appeared to be well structured and efficient. There was some confusion however, as to whether a DPH region should be responsible for following up illness cases within that region, but where the home addresses of those affected lie outside that region. Furthermore, whether it is the responsibility of the region where the illness is detected to inform the 'home' region, or whether this responsibility lies with the HPSC. In general terms, the PH/EHS players in these roles displayed appropriate empathy when dealing with role-played members of the public/relatives of members of public and were generally very patient when requesting information.	Clarify this issue in the 'Management of Outbreaks of Foodborne Illness' protocol.
Specimen collection: Whilst not literally undertaken, there was evidence of intention accompanying the case interviews to gather food/clinical samples where possible for further laboratory analysis – see *Food, water and environmental sampling* below.	None
Food premises: Undertaken virtually – see *3 – Food Business Investigation* below.	None
Preliminary hypothesis: Insufficient visibility to judge this element.	None
Early control measures: Whilst there was clear evidence of control measures as the scenario progressed, e.g. farm product quarantine, hotel closure etc., it was not clear as to what constituted 'early' and hence whether initial control measures taken were timely or appropriate.	Management of Outbreaks of Foodborne Illness needs to define 'early' controls better, perhaps with illustrative examples.

Finding/Evidence of Finding	Recommended Action
1.15.4. 2: DESCRIPTIVE EPIDEMIOLOGY	
• Case definition, as referenced previously, a case definition was compiled and distributed by the HPSC • Identify population at risk - through the various case interviews and dialogue with representatives e.g. college principal, there was a concerted effort to establish the extent of the population at risk • Case finding – examining routine surveillance data was outside the scope of the exercise as the food businesses, samples and public consumers were fictitious and hence had no real histories to refer to – the other players/stakeholders within the scope of the exercise: role-played media, consumers, other competent authorities were engaged as appropriate to build patterns of information as required • Descriptive data collection – no visibility/evidence of undertaking to exercise organisers • Descriptive data analysis - no visibility/evidence of undertaking to exercise organisers • Describe outbreak – case numbers/locations/severity was well catalogued in the OCT meetings and disseminated outside of them by the HPSC	Further consideration should be given in the protocol to when and what type of epidemiological analysis should be carried out and subsequently provided to the OCT.
1.15.5. 3: FOOD BUSINESS INVESTIGATION	
Foods associated with a processor/producer: The OCT appeared to discount the possibility of beef as the outbreak cause, quite early in the scenario. Whilst this was indeed correct, the rationale employed to come to this decision was not clear. This may have been due to the format and timing of information provided during the exercise. It is not to suggest the rationale was necessarily unsound, just that we did not have visibility of it.	None

Finding/Evidence of Finding	Recommended Action
Focus on a food business establishment: Full inspections/gathering of datasets were not within the scope of the exercise, although background information was available on request by the EHOs.	None
Management/food handlers/conditions at time of incident/suspect food: In the interests of brevity, we can report that all elements (with one exception – see below) were conducted appropriately by the various EHS regions – it should be noted that all of the data composed and provided on demand to EHOs regarding food business operation were essentially routine, that is to say it did not comprise 'hooks' in order to lead players into more detailed lines of enquiry and analysis e.g. major non-compliance in food storage protocols in order to signpost (or mask) the trace back to the cause of illness. *Exception* – **Suspect food**: Hazard assessment / food flow chart / compare to FSMS processes - no visibility/evidence of undertaking.	None
Enforcement action: There were a number of enforcement actions undertaken, notably: • Hotel Skerries – closure order served by EHS Dublin North East • Brannelly's Farm – restriction notice served by DAFM – compliance notice composed and sent to FBO • Oldcastle Organics – closure order served by EHS Dublin North East; Thai beef salad recall (Superfood - retailer) – further to an FSAI request, the retailer initiated a recall)	None

Finding/Evidence of Finding	Recommended Action
This demonstrated a willingness to be proactive, although in an exercise there is a tendency to be risk-averse, which may not necessarily be replicated in a real incident when publicity surrounding closures and industry economic factors feature as considerations. There was also a suggestion from some players that their actions were based in part on not being able to extract required information quickly enough from some entities, e.g. Oldcastle Organics. This resulted in a 'better safe than sorry' approach, but raised questions as to whether this was a result of the need to demonstrate control within the compressed timeframe of the exercise, rather than wait for more compelling evidence to materialise.	
Food, water and environmental sampling: All sampling was virtual, simulated by the facilitators initially and hence this section was out of scope in terms of live undertaking – there was evidence of intent however, in terms of sampling from Brannelly's Farm, Oldcastle Organics, Organic Us and Gurnston College from the relevant EHS sections, which suggested that appropriate local protocols were being adhered to in this respect – this included contacting the OFML (Cherry Orchard in the context of this scenario) to inform them of their intention to send samples on for analysis.	None, see 'Caveats' – 1.4 (pg 4)
Traceback: There was much evidence of systematic efforts to trace the outbreak cause back to lettuces from Brannelly's Farm – the various EHS departments interacted well across regional borders to progress from retailer/food service entity through manufacturers, processors and primary suppliers in a timely manner.	Whilst these activities were undertaken well, we suggest the use of a schematic to visually portray the supply chain as it unfolds, would be a useful addition to the protocol. This could take the form of a simple flow chart, mapping the various FBOs and their contact with offending product, then circulated to all relevant agencies as a snapshot of investigations to-date.

Finding/Evidence of Finding	Recommended Action
1.15.6. 4: MICROBIOLOGICAL INVESTIGATION	
Clinical samples: There was written/verbal evidence from various EHS sections of 'stooling' requests, in respect of unwell consumers, contacted as part of the information gathering process – the actual taking, labelling and transmission of samples was beyond the scope of the exercise, the only sample request forms being those previously composed and introduced by the facilitators.	Practical clinical sample aspects may need to be considered further in the OCT protocol depending on the particular outbreak scenario.
Processing of clinical samples and identification and typing of isolates: The PHL's engagement in the scenario, in so far as sample receipt, testing and reporting is concerned, was limited to the following: • Receipt of pre-configured sample analysis request forms - food and clinical samples • Pre-determined transmission of test results to various HSE departments • Receipt of further analysis requests/virtual samples (not predetermined) from EHS players The actual analysis of samples was outside the scope of the exercise and hence evaluation of results, interpretation and turnaround times were not possible. The PHL's participation in the OCT process however, further facilitated the sharing of information, beyond the lines of communication dictated by the scenario.	None
1.15.7. 5: HYPOTHESIS GENERATION	
The HSPC clearly stated what would be a progression of events beyond the basic hypothesis generated - 'consumption of salad vegetables is linked to illness due to this strain of VTEC 026 VT1'.	None

Finding/Evidence of Finding	Recommended Action
They further explained that next steps ordinarily would be the design of a case control study to test the hypothesis, as per the outbreak protocol, but it was not deemed worthwhile to undertake this as part of the exercise.	
1.15.8. 6: ANALYTICAL EPIDEMIOLOGY	
Based on the scenario presented and further information gathered through investigation, there was no requirement to apply analytical epidemiological studies.	None
1.15.9. 7: IMPLEMENTATION OF CONTROL MEASURES	
(a) Control of source: Various measures already referenced in *Enforcement action*, above were undertaken – to recap they were: • Hotel Skerries – closure order served by EHS Dublin North East • Brannelly's Farm – restriction notice served by DAFM – compliance notice composed and sent to FBO • Oldcastle Organics – closure order served by EHS Dublin North East; Thai beef salad recall (Superfood - retailer) – the FSAI requested the retailer to recall. There was also evidence primarily from EHS players in terms of advice/guidance given to FBOs/end suppliers, e.g. exclusion of employees with gastro-intestinal illness symptoms, cleaning and sanitising of facilities and equipment, boiling water.	Review how the 'Management of Outbreaks of Foodborne Illness' protocol describes criteria for removal of control measures, allowing for authorised officers legal powers etc.

Finding/Evidence of Finding	Recommended Action
(b) Control of secondary transmission: • Public advice – The primary vehicle for this was the (eventual*) composition and dissemination to other agencies of Q&As by the FSAI in order to define the illness and its consequences, method of transmission and practical measures to combat spread through curtailment of activities, food preparation and personal hygiene – this was used by the FSAI as a prompt for responders on the advice line, amongst other channels – the Q&A document was further bolstered by broadcasting the permanent link to VTEC information on the FSAI website. • Exclusion of infected persons – also from Q&A guidance, e.g. children to be excluded from crèches etc • Advice on personal hygiene – as per Public advice above • Protecting risk groups – also from Q&A guidance, e.g. children, elderly/infirm, pregnant etc • Control of distant cases – there was evidence of communication between the HSPC to European agencies and FSA Northern Ireland, both to inform of the developing situation and to request notification of cases outside of the RoI. *The first agreed version of the Q&A document surfaced at 12.30pm which was 3 hours into the scenario. This is too long a lead time for a tool which is necessary to both reassure/guide the public and encourage consistent messaging across the various OCT agencies – whilst informative in many areas, it was incomplete e.g. devoid of facts specific to the case such as likely root cause food stuffs, numbers of population ill etc.	• FSAI provided the majority of information to the public and the media in this exercise. • Further clarification should be considered in the protocol regarding which agency is responsible for providing the media with updates. The HSE media diverted queries to the FSAI. • The FSAI and HPSC should develop a generic template Q&A for gastro-intestinal illnesses, which can then be compiled quickly with specific information and signed off for pan-agency use. Such documents should be available for use within 1.0 hour of an outbreak (or suspected outbreak) becoming recognised in the public domain. It should then be continually updated as the situation evolves. • In relation to the above, due consideration should also be given to a 'peace time' working group of press officers/ communication managers across the agencies, in order to pre-agree their own roles/responsibilities/materials in different incident situations.

Finding/Evidence of Finding	Recommended Action
1.15.10. 8: COMMUNICATION *(In the interest of avoiding repetition, some of the sections below point to other areas of the report where a response element has already been covered)*	
OCT: See *Membership of OCT (2.2.1)* above in Section 1.14.2	See *Membership of OCT (2.2.1)* above in Section 1.14.2
Affected cases: According to the 'Management of Outbreaks of Foodborne Illness' protocol, it is desirable to make affected cases aware of public communications before they are issued to the wider audience – there was no evidence of this undertaking during the exercise, although it is appreciated that this may not always be practical or possible.	It is recommended that this advice is removed from the 'Management of Outbreaks of Foodborne Illness' protocol – it may be appropriate for smaller type (especially local) outbreaks that may go public, where those involved may be identified by the media, or where there has been a death, but if followed to the letter, it could result in delayed broadcast of communications to wider audiences.
Agencies / professional groups: The HSPC took the lead in informing HSE various sections of the developing outbreak in an efficient timely manner. Similarly, and in conjunction with the FSAI, European agencies/FSA NI were also appraised of the outbreak.	None
The Computerised Infectious Disease Reporting (CIDR) system was not used during the exercise for logistical/security reasons. In lieu of this, a substitute spreadsheet was devised by HPSC and distributed to all relevant agencies – it worked very well, suggesting that a wider visibility of CIDR might be beneficial (above those agencies who already have access to it) or another dedicated information sharing portal.	Consider feasibility of widening access to CIDR beyond the HSE to other relevant agency groups. The HPSC and/or the wider working group need to look at potential benefits and make a recommendation.

Finding/Evidence of Finding	Recommended Action
Trade/industry bodies were only engaged, when they proactively contacted the FSAI.	Trade associations should be engaged proactively with messages and reassurance – they are a potential ally if their needs are recognised and acted upon in a timely manner. It might assist matters by implementing a stakeholder map or checklist to act as an aide-memoir for the entities that are, or may, become involved.
The HPSC seemed to be dealing directly with the FSAI's CEO, bypassing other channels.	Revise 'Management of Outbreaks of Foodborne Illness' protocol, Chapter 2 – Organisational Arrangements, to include more specific channels of communication between agencies.
There was evidence that some participants, particularly those on the periphery of the incident, were not being kept abreast of actions/communications and other developments as the scenario progressed.	Consider the implementation of a shared area portal, e.g. Microsoft Sharepoint, which could also encompass a central action-logging element, for rapid and comprehensive dissemination of actions/communications and other status-type information, both to OCT participants and those who are not (but may become) involved if an outbreak spreads.
Some agencies/departments were not being alerted quickly to emerging issues, as a result of their own internal communication protocols e.g. information was sent by outside agencies/departments in a timely manner, but was not identified as a priority by the receiver and hence not escalated to the right colleague/section quickly enough.	Potential mitigations lie partly with the sender and partly with the receiver – where possible for very urgent issues, an email should be signposted with an accompanying call (not practical for mass mail-outs) or at the very least, the title box should be labelled with a clear urgent message and flagged electronically as high priority. Protocols should also be in place with the receiver to ensure that such messages are not unwittingly ignored – one solution is to employ a central email address, specifically for the receipt of such information, which is broadcast in advance to sister departments/agencies, as part of a national communications directory – see *Overview - principles of outbreak management (3.1)* in Section 1.15.1 above.

Finding/Evidence of Finding	Recommended Action
Media: There was a feeling from some that agencies were 'passing the buck' to others, with regards to media engagement.	• There is a need to ensure resources are available to support a national pan-agency response, (whether as a training exercise or a real incident). The role of the HSE media needs to be strengthened and clarified in the face of a significant public health emergency involving serious illness and death as a result of a foodborne outbreak. • Further clarification should be considered in the protocol regarding which agency is responsible, under different circumstances, for providing the media with updates.
Nearly all of the external messaging centred around distribution of the food and finding the contamination source, rather than considering the health issues. This was undoubtedly a direct result of all of the HSE drafted media/public communications being routed/edited via the FSAI. Also there was insufficient empathy shown to ill consumers/bereaved families during press conference.	• Ensure that balance is achieved in all such external communications and that the audience's likely key concerns are met. If necessary and within time bounds, employ a system of draft, edit and re-check across agency borders for correct content and tone. • Always ensure that appropriate empathy and condolences are volunteered early in any media exchange.
A press statement was supposed to be released at 13:00, but went at 14:00.	Media response times, if agreed in advance, must be adhered to – journalists will fill vacuums with other 'fact' or opinion, potentially from stakeholders with different agendas to the OCT agencies.
• The press conference was not well rehearsed and the lead responder did not seem prepared in terms of the detail – did not explain properly what *E. coli* is and the opening statement did not clearly formulate issues/symptoms, cases ongoing and public advice which would have helped to set the scene more clearly • There was also no name plates (tent cards) provided	• Where time allows, a practice run with an internal audience should always be undertaken. The latest Q&A document can be used to help colleagues play devil's advocate. This will help refine responses, key messages and generally increase confidence • Tent cards should be pre-prepared - considering the relatively modest investment required, it would be prudent to procure more permanent, professional looking name plates (perspex/metal etc) for those colleagues most likely to represent their agencies in front of the media

Finding/Evidence of Finding	Recommended Action
Twitter commentary was proactively engaged by the FSAI, using it as a platform to help dispel rumour and inaccuracies and direct followers to more reliable sources of information.	None
1.15.11. 9: END OF OUTBREAK & REPORT This section was outside the scope of the exercise.	
1.15.12. MISCELLANEOUS OBSERVATIONS	
There exists a lack of clarity and usability in the 'Management of Outbreaks of Foodborne Illness' protocol in respect of the more detailed interaction between agencies and specific action points. Such detail, as exists, is also fragmented across different sections of the document. There were also examples where different agencies within the HSE were occasionally (and unwittingly) duplicating efforts.	Consideration should be given to developing a flow diagram or other schematic for inclusion in the 'Management of Outbreaks of Foodborne Illness' protocol. This diagram should show the progression of an example event from end to end, with intervention/action points for each agency to ensure clear accountabilities. This would assist in clarifying the expectations placed upon responders and outline the evolution of the incident response.
There are different geographical border classifications between elements of the HSE, more specifically Public Health and the EHS, the former seemingly working on historic health board boundaries, the latter with the more up-to-date executive designations. There exists the potential for confusion and missed communications if borders do not match between agencies or sections.	Consideration needed as to how geographical boundaries of outbreak investigators are reconciled. Public Health could adopt the new border designations, or if this is considered impractical, a table/chart needs to be added to the 'Management of Outbreaks of Foodborne Illness' protocol cross-referencing and matching these different geographical boundaries.
The HPSC and National Reference laboratory identified that they could not call internationally from their work mobiles.	All relevant agencies/departments to review this capability – amend, where possible, as required.
There was little evidence within the FSAI of internal protocols or procedures, particularly when leading up to the 1st OCT meeting. Most activity seemed driven rather on-spec by the CEO, rather than any controlled escalation and sequence of actions/communications.	Develop internal procedures to cover FSAI specific actions and interventions points with other agencies, to complement the 'Management of Outbreaks of Foodborne Illness' protocol. Particular emphasis is required on the initial identification and escalation phases.

CONCLUSION

1.16. EFFECTIVENESS OF MANAGEMENT OF OUTBREAKS OF FOODBORNE ILLNESS PROTOCOL AND AGENCY PREPAREDNESS

Exercise Clea provided an effective and thorough rehearsal of the Management of Outbreaks of Foodborne Illness protocol.

Allowing for the caveats outlined, the exercise generated a number of suggested procedural refinements and other process improvements. It was also highly beneficial in being able to trial the draft protocol in a controlled environment instead of during a real incident. The enthusiasm with which the scenario was engaged was commendable, all parties immersing themselves fully into the emerging story and reacting with professionalism and suitable urgency.

The main positives identified as part of the exercise included:

- Widespread reference to the 'Management of Outbreaks of Foodborne Illness' protocol during the exercise
- Overall communication between agencies involved
- Timely initial escalation to player groups across all agencies
- Efficient and comprehensive investigations of cases and food businesses
- Proactive communication from the HSE to non-RoI stakeholder groups e.g. FSAI NI
- Effective engagement with Twitter (for those agencies enabled)
- Confidence from the majority of participants that the exercise would develop capability

Some areas of the Management of Outbreaks of Foodborne Illness protocol and agency response however do require further refinement, notably:

- **Opening stages before outbreak confirmation** – In order to identify the parameters of an incident and the likely stakeholder participation requirements at the OCT, a scoping meeting should be held before local or national OCTs are invoked to ensure these meetings fulfil the purpose they are intended for.
- **OCT meeting protocol** – A meeting protocol should be developed which acts as a prompt for the nominated chairperson and specifically defines how the meeting should be managed and the required outcomes, use of incident log, teleconference etiquette etc.
- **Public and media engagement** - There needs to be a more efficient, proactive and unified response to public and media interaction to avoid being driven by the media and consumers. There also needs to be a better balance between health and food messaging, to ensure the emphasis accurately reflects consumer and/or industry concerns.
- **Information sharing** – Whilst a collegiate attitude to information sharing between agencies was largely in evidence, the mechanisms to support it seem less developed and consideration needs to be given to the employment of a proprietary information sharing portal from which to share meeting minutes, situation reports, mass communications and other relevant materials to ensure a common information picture is understood by all responding agencies.
- **Local Management of Outbreaks of Foodborne Illness adaptations** – While accepting that the 'Management of Outbreaks of Foodborne Illness' protocol is in its infancy, once revised, the key OCT agencies need to develop local procedures on a regional and national basis to further refine response.

Whilst these improvements are important, they do not represent a substitute for further rehearsal. This is vital both to consolidate any changes and embed further the areas of best practice so crucial to a timely, well integrated, effective pan-agency response.

1.17. EXERCISE OBJECTIVES

The exercise achieved its objectives in respect of: inter-agency interaction, evaluation of procedural compliance, testing of communication channels and measuring timeliness of response. The cornerstone of these objectives was a rigorous rehearsal of the 'Management of Outbreaks of Foodborne Illness' protocol and its application that, within the time and resource parameters available, was undertaken well by participants.

1.18. NEXT STEPS

- Exercise Clea report to be published online
- Exercise Clea Working Group will propose revisions to 'Management of Outbreaks of Foodborne Illness' protocol
- All participating agencies to agree revisions to 'Management of Outbreak of Foodborne Illness' protocol
- Final 'Management of Outbreak of Foodborne Illness' protocol issued to all relevent agencies
- Agencies to develop/amend a local version of the 'Management of Outbreak of Foodborne Illness' protocol for use intra-agency
- Working Group in conjunction with wider agencies to consider future training needs.

APPENDICES

1.19. LOG OF KEY EXERCISE EVENTS

Date	Time	Activity
Wednesday 19th September 2012	09:30	Start of exercise
	09:26	Cherry Orchard PHL notifies first positive VTEC result to SPHM (Dublin NE)
	09:45	Temple St Hospital informs HSPC of child fatality
	09:58	HSPC informed of Gurnston College outbreak
	10:15	EHS (Dublin NE region) commences patient and FBO information trawling
	10:45	FSAI notifies Secretary General (DoHC) of emerging outbreak
	10:50	HPSC notifies FSAI CEO of emerging outbreak
	10:55	HSPC notifies all DPH regions with NE region outbreak details
	11:00	FSAI notifies Minister of State offices of emerging outbreak
	11:05	HSPC contacts HPA NI to notify outbreak and request NI sickness feedback
	11:20	HSE issues initial press statement
	11:26	HPSC sends national alert notice to consultant microbiologists, emergency physicians and GPs
	11:30	Local OCT convened (NE region) – DPH chairs
	12:12	DoHC notifies Ministers Office, Office of CMO and Office of Secretary General of HSE press release
	12:30	HSE issues public FAQs on website
	12:50	FSAI MAC Crisis Group convenes
	13:00	Salad identified as illness cause (within OCT meeting)
	13:15	HSPC creates and disseminates 'CIDR substitute' Clea outbreak entries to all relevant agencies
	13:52	HPSC proposes joint press conference with FSAI
	13:57	FSAI CEO undertakes radio interview
	14:30	National OCT convenes – HSPC chairs
	14:40	FSAI enforcement notice issued to close Brannelly's Farm (DAFM), Oldcastle Organics (EHS) and Hotel Skerries (EHS) – recall ordered on Oldcastle Organics
	15:30	Joint press conference held – FSAI/HSPC