TRINITY COLLEGE
UNIVERSITY OF DUBLIN

THE DEVELOPMENT OF PERFORMANCE INDICATORS FOR THE FOOD SAFETY FUNCTION OF THE ENVIRONMENTAL HEALTH SERVICES

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A DISSERTATION SUBMITTED TO THE FACULTY OF HEALTH SCIENCE IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF SCIENCE IN HEALTH SERVICES MANAGEMENT

DUBLIN
SEPTEMBER 2008
DECLARATION

I declare that this dissertation has not previously been submitted as an exercise for a Degree at the University of Dublin, Trinity College or any other University. I further declare that this Dissertation is entirely my own work.

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Geraldine Feehan
SUMMARY

The Environmental Health (EH) Services are to relocate from the Primary, Community and Continuing Care (PCCC) Directorate to the Population Health Directorate of the HSE. This will result in changes to the structural and reporting relationships and lead to a more strategic approach to the provision of services. In line with HSE policy there is a drive to develop performance indicators. This will allow evaluation of the services provided and allow resources to be targeted appropriately. This study focuses on the Food Control activities of the EH Service.

The purpose of this research is to ascertain how to measure the performance of the EH Food Control Services activities against the objectives by linking the performance with the desired outcomes, which are to ensure that food is safe, will not cause illness and is in compliance with the law. The evaluation of environmental health services presents difficulties in linking activities to outcomes because the activities may be related to a negative or non-event such as the prevention of food borne illness. There is acceptance that the current performance indicator is not effective as it is an output measure based on the numbers of inspections completed. Other important activities are not measured.

The literature on performance measurement was reviewed and the terminology defined. The difference between outputs and outcomes was highlighted. There does not appear to be a generic model of a performance measurement system that could be adapted for the EH Food Control Service. The different approaches to food safety in the literature were examined to determine their suitability for use as performance indicators and form a basis from which to develop a performance measurement system. These included carrying out inspections on a risk basis; evaluation of inspection results; HACCP type food safety management systems; and educated food workers. Disclosure models were examined to determine their effectiveness to improve food safety and public health. The suitability of using food poisoning results as a performance indicator was assessed.

Mixed methods research was undertaken sequentially. The first phase was qualitative exploratory research. This was undertaken purposively through a focus group with Environmental Health Officers (EHOs) and Senior Environmental Health Officers (SEHOs) and semi-structured interviews with Principal Environmental Health Officers (PEHOs) from different regional areas. Their views were elicited on the objectives of the EH Food Control Service; the current performance indicators; the benefits and challenges of performance
indicators for the Service; their knowledge of existing models; and their suggestions for suitable performance indicators. A general inductive approach was used to analyse the data generated.

The second phase of the research undertaken was a census of the target population through an anonymous online survey. The questionnaire was developed using extant theory and the inductive findings from the first phase. The survey was conducted through Survey Monkey website. The data were a simple analysis of the frequency and pattern of the survey responses.

The findings demonstrate that some activities could be used to measure performance without any major changes to current practice. Individual risk assessment of food establishments and evaluation of inspection results could lead to more effective and efficient use of resources and allow comparability. The literature suggested that a HACCP type food safety management system could be used as a measurement but the research highlights some barriers to this. There is no strategic approach to food worker training which results in a lack of focus. The literature suggests that disclosure of inspection results leads to safer food and a reduction in food borne illness. Disclosure of inspection results is not currently feasible due to legal constraints but the research findings show that such a system may be acceptable to EHOs.

The key challenges identified include possible resistance from EHOs, inconsistencies and lack of uniformity. There is a critical need for a Service Plan outlining the strategic objectives. Performance indicators cannot be chosen in isolation of a service plan as the activities must be linked to the achievement of the strategic objectives.
ACKNOWLEDGEMENTS

I would like to express my sincere gratitude for the support and assistance I have received from many people during the course of this study.

To Charles Normand, my supervisor, for his knowledge, guidance and help.

To Mandy Lee, lecturer for sharing her knowledge and expertise during the two years.

To Dorothy Guina-Dornan, for her generous help, guidance and encouragement.

To Martin Devine for his help and support.

To my fellow classmates for their friendship throughout the course. A particular thank you to Deirdre Murphy for her friendship and encouragement throughout the two years.

To Bernice Martin for her assistance.

To all the research participants who so willingly gave their time and provided me with a valuable insight into the subject.

To my friends and family who in different ways gave me unconditional support, a sincere thank you.

Most of all, to Jeds, Niamh, Fiacra and Finbar who have shown endless patience over the past two years and given me unflinching support, love and encouragement throughout.
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CHAPTER ONE

INTRODUCTION

1.1 Introduction

Environmental health is defined by the World Health Organisation and the European Union as:

“those aspects of human health, including quality of life, that are determined by physical, chemical, biological, social, and psychosocial factors in the environment. It also refers to the theory and practice of assessing, correcting, controlling, and preventing those factors in the environment that can potentially affect adversely the health of present and future generations.” (Mac Arthur and Bonnefoy 1997:5)

The origins of the Environmental Health Services (EH Services) date back to the Public Health (Ireland) Act 1878. The services provided are broad and varied ranging from food safety, infectious disease control and port health to public health nuisance, air pollution, noise monitoring, tobacco control activities and housing inspections.

Since the formation of the Health Service Executive (HSE), in January 2005, the HSE has been organised into three pillars: Primary Community and Continuing Care Directorate (PCCC), Population Health and the National Hospitals Office (NHO). The EH Services have come under the umbrella of PCCC and are responsible for delivery of services through 38 administrative units each headed by a Principal Environmental Health Officer (PEHO) reporting directly to the Local Health Manager within the PCCC Directorate.

Because each unit operates independently of the other and reports to a different Local Health Office Manager there is disparity in the range of services offered in the various units (HSE 2006). The different local approaches and the diverse reporting relationships are contributing to a lack of coherence in service delivery (HSE 2006). The lack of an overall strategy with clear goals and objectives has resulted in a failure to measure the various functions and activities carried out by the EH Services (HSE 2006).
1.2 Review of Environmental Health Services

A review of the EH Services (2006) was carried out on a national level which resulted in a recommendation that the Services relocate from PCCC to Population Health to give a more coherent strategic approach to the provision of services within a population health framework. The Review Committee is of the view that the integration of EH Services within the Population Health Directorate will put the necessary structural and reporting mechanisms in place to ensure the delivery of a high quality effective and efficient service (HSE 2006). A direct reporting relationships to four Area Chief Environmental Health Officers will give a more cohesive service (HSE 2006).

1.3 Recommendation to Develop Performance Indicators

The move to Population Health will create a new focus on service delivery driven by a population health agenda with emphasis on a consistent uniform approach nationally (HSE 2006). In line with HSE policy, there is a drive to develop performance indicators to facilitate the planning, delivery and measurement of services (HSE 2008). According to Shellhorn (2007:48) performance measures must be “part of a comprehensive performance management approach for aligning goals, spending, service delivery, and results”. This study will explore the development of performance indicators for the food safety function of the service.

1.4 Overview of Environmental Health Food Control

Approximately 63% of all the EH Services activities are food related (HSE 2006). The food safety functions of the EH Services are carried out under contract to the Food Safety Authority of Ireland (FSAI). The Service Contract sets the schedule to a great extent in the planning of food safety activities. Amongst other requirements there is an obligation in the contract for the EH Services to carry out a certain number of risk based inspections in all food establishments.

The EH Food Control Service in the HSE has responsibility for inspections in 47,142 food establishments (HSE National Service Plan 2008). The inspections are carried out under contract to the Food Safety Authority of Ireland. The establishments include manufacturing, wholesale, retail and catering as well as healthcare institutions such as hospitals and nursing homes.
1.5  Food Safety Authority of Ireland (FSAI)

The Food Safety Authority of Ireland (FSAI) was established under the FSAI Act, 1998 and has responsibility for enforcement of all food legislation in Ireland (Government of Ireland, 2008). Under the Act, the FSAI delegates certain of its powers, duties and responsibilities to the HSE by means of a Service Contract, which is renewable every three years (FSAI, 2006a). The contract under Section 11(2) of the Act requires:

- the determination of compliance with food legislation by means of –

  i.  the inspection, approval, licensing and/or registration of premises and equipment, including premises or equipment used in connection with the manufacture, processing, disposal, transport and storage of food,

  ii. the inspection, sampling and analysis of food, including food ingredients, and

  iii. the inspection and analysis of food labelling,

  iv.  the provision of food safety and food hygiene education to producers, manufacturers, distributors, retailers and caterers.

1.6  Legislation

Food is defined under Article 2 of Regulation (EC) 178/2002 (European Commission 2002) General Food Law, which came into effect January 2005, as:

“any substance or product, whether processed, partially processed or unprocessed, intended to be, or reasonably expected to be ingested by humans. ‘Food’ includes drink, chewing gum and any substance, including water, intentionally incorporated into the food during its manufacture, preparation or treatment. It includes water after the point of compliance as defined in Article 6 of Directive 98/83/EC and without prejudice to the requirements of Directives 80/778/EEC and 98/83/EC.”

The more recent legislation governing food safety in Ireland stems from European law. A new suite of legislation known as the ‘Hygiene Package’ to protect public health and simplify food law is applicable since January 2006.
1.7 Inspection of food businesses based on risk

Article 3 of EC Regulation 882/2004 requires that official controls are carried out on a risk basis with appropriate frequency (European Commission 2004b). The FSAI (2006b) COP No. 1: Code of Practice For the Health Service Executive on the Risk Categorisation Of Food Businesses Revision 1, defines three risk categories – High, Medium and Low for food businesses to determine frequency of inspections.

The FSAI (2006b) COP 1 does not allow the risk category to change but the frequency of inspection may be revised and reduced or increased. The criteria for risk based inspections are set out in Article 3 of the EC Regulation 882/2004 (European Commission 2004b) and in the FSAI (2006b) COP 1, which emphasise the requirement for food business operators to implement a food safety management system based on the principles of Hazard Analysis Critical Control Point (HACCP). The reliability of food businesses’ own checks of their food safety management systems can reduce frequency of inspections (FSAI 2006b).

1.8 Hazard Analysis Critical Control Point (HACCP)

Hazard Analysis Critical Control Point (HACCP) food safety management system is a science based and systematic approach to food safety management. HACCP was developed in the United States of America by NASA in the 1960s and was adopted by the Codex Alimentarius Commission (FAO 1997). HACCP is recognised internationally as an effective food safety measure. The risks to food safety (microbiological, chemical and/or physical) are identified and controls are put in place to eliminate or reduce the risk/hazard to an acceptable level. Successful implementation requires commitment from management and staff.

1.8.1 Flexibility in HACCP

The legislation introduced by Regulation (EC) No. 852/2004 (European Commission 2004a) is now less prescriptive and allows flexibility in certain aspects of HACCP. The flexibility gives cognisance to the reality of how small food businesses operate and acknowledges that they should not be over burdened with regulatory requirements in order to achieve safe food.

The flexibility allows variations in practice by the food establishments but they remain responsible for the effectiveness of the approach they choose. The FSAI Guidance Note 11 Assessment of HACCP Compliance (Revision 2) (FSAI 2007:11) advises that EHOs should use their “professional judgement” to determine compliance. The absence of a clear guidance
or a uniform approach towards flexibility may lead to apparent inconsistencies in enforcement.

1.9 Food Worker Training

Food worker training is an essential component of a food safety management system/HACCP. Food business operators are responsible for ensuring that “food handlers are supervised and instructed and/or trained in food hygiene matters commensurate with their work activity” Regulation (EC) No. 852/2004 (European Commission 2004a). The FSAI (2007) Guidance Note No. 11 Assessment of HACCP Compliance (Revision 2) states that training should be proportionate to the nature and size of the business and need not be formal.

1.10 Food Business Operators (FBOs)

Under Regulation EC 852/2004 (European Commission 2004a) responsibility for food safety rests primarily with the FBO. Food businesses must put in place and maintain a food safety management system based on the principles of HACCP. This puts the responsibility for risk control at all stages of food production firmly on the shoulders of the business operators.

1.11 Summary

The EH Services are to move to Population Health as part of a more strategic approach to the delivery of services. The activities of the EH Service Food Control Units are carried out under contract to the FSAI. There is a need to align the legislative requirements, the terms of the contract and the resources to achieve agreed strategic outcomes. The selection of the correct performance indicators will drive the service in the achievement of those objectives.

1.12 Outline of chapters

Chapter One describes the review of the EH Services. The recommendation to relocate to Population Health requires a restructured reporting relationship and a more strategic approach. There is a need to develop performance indicators. Chapter Two defines the terminology used in performance management and gives the background to performance measurement in the public services. Chapter Three evaluates the effectiveness of the current measurement used in the EH Food Control Services. Various initiatives to improve food safety are examined for their potential suitability as performance indicators. The methodology selected will be outlined in Chapter Four. The results will be presented in Chapter Five and
Chapter Six will give the discussion and conclusions. The limitations of the research and suggestions for further research will be presented.
CHAPTER TWO
BACKGROUND TO PERFORMANCE MEASUREMENT

2.1 Introduction

Chapter One described the Environmental Health Services review and the recommendation to relocate to Population Health. There is a need to develop performance indicators. This Chapter outlines the background to performance measurement in the public services. Definitions are provided for the terminology used in performance measurement. The benefits and challenges are outlined.

2.2 Background to Performance Measurement in the Public Service

The need to implement performance management systems in the public service is agreed at all levels both nationally and internationally. The EH Food Control Services provide a public service and must demonstrate that their activities are valuable. However, the existing methodologies for assessment and evaluation are not well developed.

The need for a more effective Civil Service was set out in Delivering Better Government (Department of the Taoiseach, 1996). The requirement for accountability and evaluation emphasised the necessity to develop appropriate performance indicators for the public service as part of performance management systems (Boyle, 1989; Boyle, 1990; Boyle, 1996; Boyle, 1997; Boyle, 2000; Boyle, 2005; Government of Ireland, 2002). The performance measures must be relevant and robust (Sustaining Progress, 2003). Public services are measured by the effects they have on society, which are the desired outcomes (Department of Finance, 2004). The Department of Finance framework document Management Information Framework (2004) recommends that performance indicators should be ‘SMART’ specific, measurable in quality & quantity, achievable but also challenging, relevant to the objectives of the organisation, and time bound.

2.3 Health Services

The increasing cost of health services is a cause of concern for governments worldwide. A performance measurement system must be closely linked to the service plan to enable monitoring and evaluation of progress in achieving work objectives (Butler, 2000; Butler and Boyle, 2000; Department of Health and Children, 2001; Butler, 2002). The continued increase
in resources to the health services cannot be sustained without the implementation of measures to increase effectiveness and efficiency (Brennan, 2003). Both individual and team performances must be linked to the strategic objectives (Prospectus, 2003). Joyce (2003) was critical of the lack of clarity of goals and objectives in the health services resulting in inadequate management information to make decisions or to measure performance. The World Health Organization (WHO) and the Organisation for Economic Co-operation and Development (OECD) encourage the development of performance measurement systems in health systems to allow international comparability (Kelley and Hurst 2006).

2.4 Health Service Executive (HSE)

A national service plan must be prepared annually by the HSE for approval by the Minister for Health and Children. In 2007, for the first time the service plan set out quantifiable targets, outputs and outcomes (McDaid and Wiley, 2007). Consistency in planning throughout the service and a high level of performance are required to achieve the objectives in an efficient and effective manner with accountability, transparency and value for money (HSE 2008).

2.5 Evaluation of Environmental Health Services

Environmental Health provides a wide diversity of services which are difficult to target appropriately without a means of evaluation (Drew et al 2000). The World Health Organization (WHO) is committed to developing and improving environmental health services (Drew et al 2000). The WHO recognised the weakness in the methodology for assessing services. Guidelines were drawn up by the WHO in response to requests from European Member States for guidance in assessing environmental services (Drew et al 2000).

The following diagram illustrates the process:

![Fig. 5. Generic health service model](source)

(Source: Drew et al 2000)

Figure 2.1 Generic Model
Drew et al (2000) defined the terminology used in performance management systems:

**Inputs** are the resources, including the raw material, money, personnel, training and time that are used to plan and carry out different activities.

**Process** refers to the transformation of inputs into activities and outputs, which are the results of the planned activities.

**Outcome** can be thought of as the change in the population as a result of the outputs.

The food inspection service is a simple example of an environmental health service. Personnel and money (inputs) are budgeted for a certain number of inspections (activities) during a given period of time. As a result of these inspections, some establishments are fined or closed because of health code violations. These results are the outputs. The reduction in, or lack of, food poisoning episodes in the population are then said to be the outcome of the food inspection service. (Drew et al 2000:21-22).

Drew also defined the terms efficiency and effectiveness.

**Efficiency:** This is a measure of how effectively resources are being used. It is a direct relationship between the results obtained from a service (outputs) and the amount of effort expended in terms of human, financial and other resources (inputs), health processes, technology and time. Efficiency demonstrates how well the outputs have been produced from the inputs.

**Effectiveness:** Effectiveness expresses the degree of attainment of the predetermined objectives and targets of a service. Effectiveness is assessed in order to improve the formulation of services, objectives and goals. (Drew et al 2000:23, 24).

### 2.6 Performance indicator

A performance indicator is something that is easily measured, such as a pre-set target that will indicate that the objectives, that is, the desired outcomes, are being achieved or have been achieved (Mosse and Sontheimer, 1996). The indicator is at the centre of any performance monitoring system, it defines the data that must be collected to enable measurement of progress, it is used to monitor the activities on an ongoing basis, and will eventually be used to evaluate the performance achieved compared to the planned results (Mosse and Sontheimer, 1996). Performance indicators must be relevant and closely linked to the strategic
goals and objectives of the organisation (Audit Commission, 2000a; Audit Commission 2000b). A performance indicator must be well defined, accurate, simple but robust and data capture should not be costly (Stout 2007). Performance measurement requires the collection of information regularly to monitor how the policy or programme is progressing at any point in time (Stout 2007). A performance indicator can be used at any stage for measurement purposes. An indicator can be used to measure inputs, outputs, outcomes (Mosse and Sontheimer, 1996). It is used to monitor the ongoing work activities and will eventually be used to evaluate the success of the work performance (Mosse and Sontheimer, 1996). Evaluation is essential to any organisation because “you cannot improve performance until you know what the present performance is” (Armstrong, 2006:59).

2.6.1 Outputs, outcomes

Outputs are often confused with outcomes. The output is the quantifiable result of the activity whereas the outcome is the effect of the activity which may not be easily measured (Armstrong 2006). Bouckaert and Van Dooren (2003:130) cite Hatry to differentiate between outputs and outcomes:

“*The number of patients treated and discharged from a mental hospital (output indicator) is not the same as the percentage of discharged patients who are capable of living independently (outcome indicators).*” (Source: Cited in Hatry, 1999:15)

The outcomes are not from the actions of the organisation, but the consequences of actions, which results in changes of knowledge, attitude or behaviour, conditions or events (Bouckaert and Van Dooren, 2003), (Stout 2007).

Stout (2007) provides a framework for performance measurement in the United States Department of Agriculture (USDA) Cooperative State Research, Education, and Extension Services (CSREES) called The Logic Model Roadmap. This gives a very clear layout and helps to dispel the confusion between the various elements. This could be used as an Environmental Health Model.
The Logic Model Roadmap

(Adapted liberally from: Stout 2007)

Figure 2.2 Logic Model

2.6.2 Benefits of performance indicators

Performance indicators measures progress, provide feedback and can be used to improve performance (Mosse and Sontheimer, 1996). They can be used for strategic planning, performance accounting, forecasting and early warning during programme implementation (Mosse and Sontheimer, 1996). Performance indicators are useful for demonstrating results to the funder and the public, benchmarking and quality management (Mosse and Sontheimer, 1996).

Armstrong (2006) suggests that performance management is good practice and vital to achieving success for an organisation because it sets the direction, allows monitoring and measuring of performance and results in action if required. Performance indicators can bring role clarity and high performance to individuals and team members and boosts morale in an organisation through recognition of their contribution (Armstrong, 2006). According to Drew et al (2000) performance measurement is useful for identifying areas that do not add value. It allows progress to be measured, helps set priorities and is useful for evaluating the effectiveness and efficiency of the services (Drew et al 2000). Indicators will improve service delivery, recognise and respond to the needs of the public and prioritise decisions and actions (Drew et al 2000).
2.6.3 Challenges to performance measurement

Performance measurement has been in use in private industry for many years but the adaption of the system for use in the health services poses particular challenges for the EH Services where the outcomes are more elusive because the services must deal with the past, the present and the future, and information can be unreliable (Drew et al 2000). There is a view that EH outcomes are difficult or even impossible to measure. How can one prove that the work activities has prevented a non-event or led to better health in the population? (Drew et al 2000; Beck and Johnson, 2006). Bouckaert and Van Dooren (2003:133) warn that performance measurement in the public sector “contains some traps”. They caution against using vague or ambiguous goals for political expediency and the use of performance information in a dysfunctional way to give the appearance of a more flattering result (Bouckaert and Van Dooren, 2003). “Performance measurement is only useful if it improves policy or management” (Bouckaert and Van Dooren, 2003:135).

Drew et al (2000) criticised the UK Audit Commission for a too narrow approach to environmental health activities which could result in ignoring areas that are not specified. Care must be taken that the indicators are relevant, adequate and reflect the effectiveness, efficiency, quality and economy of the services rather than just good value (Drew et al 2000).

2.7 Summary

The background for the development of performance measurement in the public services has been outlined. The terminology has been defined and the difference between outputs and outcomes highlighted. Performance measurement is about linking organisational activities to the achievement of objectives. There are difficulties in measuring the outcomes from the environmental health services that relate to the prevention of adverse public health. The advantages and challenges to the implementation of performance measurement systems were examined. The advantages include ongoing measurement and evaluation to demonstrate results. The challenges are to choose relevant easily measured indicators for all the activities that will indicate the achievement of the strategic objectives.

The next Chapter will examine the effectiveness of the current indicator in the EH Food Control Services and explore various options that could be used to link the activities to performance indicators.
CHAPTER THREE

PERFORMANCE MEASUREMENT IN FOOD CONTROL

3.1 Introduction

The definitions for performance indicators were outlined in the previous Chapter. The literature is limited regarding performance measurement in EH Food Control Services. The effectiveness of the current performance indicator will be assessed.

The approaches taken to food safety in the literature are explored and assessed for relevance to the Irish system. Risk based inspections, HACCP type food safety management systems and food worker training will be assessed. Disclosure models will be examined to determine if transparency has a role to play in ensuring safe food. The suitability of using food poisoning results as an indicator will be examined.

3.2 Current Environmental Health Performance Measurement

Whilst the establishment of the FSAI and the Service Contract has led to increased in funding and resources to improve food safety, it has also resulted in a reliance on the Service Contract to direct activities. The number of inspections required to comply with the FSAI Service Contract is the current performance target for the EH Food Control Services. The numbers of inspections are a progress report on the agreed targets but do not provide information on the outcomes.

It is the facts about the work projects rather than the actions that must be demonstrated by the indicators (Mosse and Sontheimer 1996). The collection of data is not worth the trouble if it is not meaningful information which will add value or benefit the organisation (Wealleans 2001), (Armstrong 2006). Without measurement or evaluation of the impact or outcome of the inspections it is difficult to know whether or not the objectives have been achieved and whether the food safety policy has been effective (Drew et al 2000). According to Mosse and Sontheimer (1996) the emphasis must be on whether the activity is actually doing any good and the results should be measured as well as processes.
Armstrong (2006:60) suggests that “what gets measured is often what is easy to measure”. He cites Levinson (1970):

“It can be argued that what gets measured is often what is easy to measure. And in some jobs what is meaningful is not measurable and what is measurable is not meaningful. It was asserted by Levinson (1) that: ‘The greater the emphasis on measurement and quantification, the more likely the subtle, non-measurable elements of the task will be sacrificed, quality of performance frequently, therefore, loses out to quantification.’” (Armstrong, 2006:60).

Beck and Johnson (2006) are critical of a system that records lists of tasks such as inspections and violations which provide meaningless information to leaders, “carefully worded activities that sound like achievements that save money or preserve health but do not fit the definition of a outcome-based goal. These activities imitate achievements but, in reality, are list of tasks done, not tasks that truly report value to the organization leaders” (Beck and Johnson, 2006:40). They consider that inspections “are merely a list, as are the number and types of violations found. An inspection is a snapshot in time and does not reflect the attainment of a goal.” (Beck and Johnson, 2006:40).

The important question is how will the organisation know that the objectives have been achieved? (Armstrong, 2006). The answer has to be expressed in a way that confirms that either the quantified targets/outputs have been met or exceeded or that a project has been completed to a satisfactory standard, or that qualitative outcomes have reached “an agreed standard of performance” (Armstrong, 2006:60). Inspections numbers can be used as a valid proxy indicator for outcomes provided that the inspection process has attained the required standard.

The failure to prioritise services in the past and the lack of strategic planning or scientific evaluations may have resulted in the provision of non essential services at the expense of other necessary ones (Drew et al 2000). There is a concern that the EH Service are putting emphasis on activities that are not contributing to the desired outcome of public health (HSE 2006). Malley (2007:7) referencing Bundred (2006), and Bevan (2006), advises that goal displacement can occur when the wrong things are measured with “perverse outcomes, such as ‘meeting the target but missing the point’.”

The pressure to achieve numbers of inspections is not only an Irish concern. In Florida:
“This approach has caused Environmental Health staff to be reactive to new and emerging threats rather than building capacity to prepare for and prevent those threats, and keeps the public from receiving the full complement of environmental health services to which they are entitled” (Keene et al 2007).

Environmental Health Services should be judged on the public health outcomes resulting from the services rather than the outputs currently used (Keene et al 2007). Whilst the focus has moved from an output to an outcomes approach there is difficulty in implementing an outcomes approach (Perrin 2006). In Australia, the Auditor General found that the performance indicators and targets in the Food Safety Unit of Victoria did not fully address performance against the regulatory responsibilities, failed to measure the extent to which food for sale was fit for human consumption or whether food safety was improving (Victoria Auditor General Office, VAGO, 2002). The Canadian Auditor General was critical of the failure by the Canadian Food Inspection Agency (CFIA) to provide better information on performance (CFIA, 2003). Similarly, in the UK, the National Audit Office (2003) recommended that the Food Standards Agency needed to develop performance indicators. Governments have realised that measuring performance and process by focusing on the inputs, the activities and the outputs do not produce results (Perrin, 2006).

3.3 Food Sampling

Food samples taken routinely in food premises in accordance with the annual sampling programmes are also measured. The numbers of samples achieved against the plan and any infringements are recorded and reported to the FSAI. There are mixed views on the usefulness of sampling as part of official controls. Wong et al (2004) found that at least half of the EH Departments in the United Kingdom did not believe that food sampling contributes to a reduction in food borne illness. However, sampling is a necessary monitoring tool to determine the microbiological and compositional safety of foods.

3.4 Other activities

Other activities such as the delivery of hygiene education training courses to food workers are not measured or evaluated. The Service Contract requires the delivery of food safety training to food workers but there is no target set. Drew et al (2000) suggest that if indicators are properly designed there should be a relationship to the activities. There are outcomes from all work activities. Even if the outcomes are not quantifiable the performance should be measured in terms of what outcomes have been achieved in comparison to what outcomes
were expected. (Armstrong, 2006). The outcomes should be expressed qualitatively as a standard or a competency level attained so that the expected outcome can be compared with the actual outcome (Armstrong, 2006).

3.5 Effectiveness of current indicator

The inspection activity is a regulatory requirement and a core function of the EH Service. As such it must serve as a strategic outcome. The inspection of food establishments is also an official control and is the traditional approach to food safety. The performance indicator measures the activities and outputs of the Environmental Health Service, that is, the overall inspection numbers, but fails to measure increases or decreases in food safety standards in the food businesses inspected. The emphasis is on producing numbers of inspections rather than in trying to evaluate the outcomes achieved by those activities (Christie, 1995). According to Goebbels, the inspection activity can only be effective if it is clear what the objective of the inspection is and what it is hoped to achieve (Food and Consumer Product Safety Authority, 2005).

3.6 Inspection activity

There are conflicting views in the literature on the efficacy of the inspections as a means to achieve safe food. Corber et al (1984) found that increasing the numbers of inspections will not necessarily lead to improvement in standards. In the United States, inspections cannot identify risks of food borne illness because the focus is on cleanliness rather than risk based audits (Boehnke, 2000). Food poisoning outbreaks were not prevented despite recent inspections (Mullen et al 2002). Inspection results over a seven year period showed food businesses which went on to experience food poisoning outbreaks were not scored differently from food businesses which did not (Jones et al 2004). Regular inspections failed to improve standards in ‘farmers markets’ (Worsfield et al 2004).

But it is known that inspections provide an incentive for food premises to comply with the law (Roberts and Deery, 2004). Pallaske (2005) believes that inspections are the best way to detect risk factors likely to cause illness.

Worryingly, the reason for repeat violations in food businesses may be that the underlying causes have not been dealt with which results in a return to the original pattern of unsafe practices (Higgins and Hartfield, 2004). Selman and Green’s (2005) study seems to confirm that view. They report that some EHOs believe they are effective in detecting risks only
whilst in the restaurants but not afterwards (Selman and Green, 2005). They say that this is reflected in the number of repeat violations (Selman and Green, 2005). Wheeler (2006) agrees that inspections are useful for highlighting infringements on the day, but fail to bring about any permanent improvement, which results in a continuous cycle of inspection and reinspection. Inspections are unlikely to identify factors contributing to outbreaks because they focus on regulatory compliance (Selman and Green, 2008). Stryker (2005:147) believes that inspections are a powerful tool, but cannot achieve safe food because “food borne illness cannot be inspected away”.

3.7  HACCP & Food Worker Training

There is general agreement in the literature that the auditing of HACCP type food safety management systems, food worker training and risk assessments are the most appropriate approaches to food safety inspections. Roberts and Deery (2004) surveying the Victoria EH Service recommended that the EH Food Control Services should be proactive in providing effective education and training to food business operators, their food safety management systems must be audited and corrected in a timely manner, and risk based inspections must be introduced so that the higher risk premises are given priority. The inspection process must put emphasis on food safety management systems, self assessment and educated food workers which can lead to safe food (Mullen et al 2002; Worsfield et al 2004; Stryker, 2005; Thompson et al 2005; Wheeler, 2006; Reske et al 2007).

The presence of at least one certified food handler in a food business was found to be 1.5 times more likely to receive a green pass inspection than a food business without a certified worker (Toronto Public Health, 2002). Food hygiene training for food workers is an essential component of a HACCP food safety system (Walker et al 2003). Food workers must be trained in food hygiene to prevent food borne illness and the training must be of a high standard to be effective (Kramer and Scott, 2004). However, Mitchell et al (2007), in North Carolina, found that even trained food workers continue to be a major contributor to the transmission of food borne illness.

In Alaska where the geography is vast, resources are limited and the inspection system is ineffective, food business operators must take responsibility for safe food by changing their attitudes (Stryker, 2005). Stryker (2005) advocates a partnership approach to food safety between the EH service and the food business operators. The EH Service must work with the FBOs to change their food handling practices, their attitude and their behaviour to achieve safe food (Stryker, 2005). The EH Service need a change of mindset so that EHOs take on a
consultant role with a clear focus on the outcome of the risk based inspection process rather than on number of inspections (Boehnke, 2000; Stryker, 2005; Wheeler, 2006; Reske et al 2007).

3.8 Food Business Operator Responsibility

The FBOs must take responsibility and audit their own food safety management systems. Stryker (2005) proposes the introduction of HACCP type food safety management systems in all food businesses and food worker training. Self assessment and continuous monitoring must be introduced (Stryker, 2005). Safe food is the responsibility of the business operator not the authorities (Stryker, 2005; Van Tonder et al 2007). The management of food businesses is ultimately responsible for ensuring HACCP and food worker training (Van Tonder et al 2007). According to Taylor (2001) food business operators do not have the confidence to critically evaluate their own systems leading to a lack of ownership and effectiveness. Similarly, Fairman and Yapp (2004) do not believe that food business operators have the knowledge or expertise to become self regulatory in HACCP resulting in reliance on the enforcer for advice and assistance.

In Ireland, the FSAI data shows that approximately 65% of the premises under the remit of the HSE are inspected more than once annually with 32% committing at least one infringement (FSAI, 2006c). Of those 71% were establishments in the service sector. The FSAI (2006c) Annual Report indicates that 47% of the infringements committed were for general hygiene practices and 33% were related to HACCP/risk assessment although HACCP has been a legislative requirement in Irish food premises since 2000 (Government of Ireland, 2000). In a baseline survey carried out by the FSAI and the Health Boards (now HSE) in over 1,000 hospitals, nursing homes and hotels only 20% were in full compliance (FSAI, 2004). The main barrier to full compliance in hotels and nursing homes was identified as the lack of in-house HACCP skills (FSAI, 2004). A second survey to determine the level of butcher shop compliance found that of 862 targeted butcher shops selling ‘ready to eat’ as well as raw meat and butcher counters in supermarkets, only 36.4% were fully HACCP compliant (FSAI, 2006d). Again, the main barrier was the lack of in-house HACCP skills (FSAI, 2006d). The surveys were carried out as part of a FSAI-HSE National HACCP Strategy. Both surveys reported improved compliance during the course of the surveys (FSAI, 2004; FSAI 2006d).

A more recent joint initiative, by the EH Service and the FSAI, in 2008, is an ongoing baseline survey to determine the level of HACCP compliance in restaurants of greater than 50 seats. The survey will benchmark the present standard in those restaurants which can then be
used to plan improved performance. HACCP compliance in food establishments will indicate that risks are reduced or controlled to an acceptable level to ensure safe food.

### 3.9 Risk assessment

Risk assessment can direct resources to where they are most needed. According to Hampton (2005) risk assessment of food businesses should lead regulators to direct resources towards those who pose the greatest risk and thus be more effective. Not all premises need to be inspected and advice is often a more useful tool than inspection in achieving objectives (Hampton, 2005). A risk based approach not only safeguards public health by ensuring that the focus is on the areas where the risk is greatest but it is also the most efficient use of resources Hampton (2006).

In Ireland, the FSAI (2006b) COP 1 allows for changes to inspection frequency but in reality it remains unchanged in most situations. Verbal communication suggests that Donegal is an exception to this where a scoring system based on risk has been developed by the EH Food Control Unit. This further refines the risk categories and appears to give a uniform approach that is consistent, comparable, transparent, and fully compatible with the FSAI (2006b) COP 1. The scoring system result is used to determine the frequency of inspection based on actual risk rather than the categorised risk in the FSAI (2006b) COP 1. This system should result in the direction of resources to the areas that pose the greatest risk.

### 3.10 United Kingdom

In response to a government demand for accountability and ‘Best Value’ from local authorities in the United Kingdom a ‘Toolbox’ of performance indicators for the EH Services was developed to measure performance in reaching objectives, costs, managing efficiency, effectiveness, quality and fair access (CIEH Toolbox, 1999). Yapp and Fairman (2003) are critical of the ‘Best Value’ monitoring data and conclude that the performance measures are biased towards efficiency but add little value to gauge quality or effectiveness. The ‘Best Value’ indicator was more of a checklist than a standard (Yapp and Fairman 2003).

Yapp and Fairman (2003) considered evaluation of results data from individual premises to identify compliance levels with a view to using the results for comparison purposes between food premises and between the local authorities. The data would also allow local authorities to assess the performance of their strategies such as education and enforcement on the inspection scores (Yapp and Fairman, 2003). They believed that it would be difficult to access
the inspection scheme rating from the local authorities and difficult to interpret a quantitative rating scheme within a food business (Yapp and Fairman, 2003). They also found that lack of consistency and subjectivity would be the greatest weaknesses (Yapp and Fairman, 2003).

3.11 Disclosure of Inspection Results

Various systems for disclosure of inspection results have been adopted internationally such as ‘Smileys’, in Denmark, ‘Scores on Doors’, in the UK, Dine Safe, in Toronto, and posted grading in Los Angeles and other parts of the USA. The benefits of disclosure include improved compliance, better hygiene standards, food safety awareness and significantly a reduction in food borne illness (Guina–Dornan 2005). According to Boehnke (2000) no public health benefit or outcomes have been reported from the use of disclosure over non disclosure in the USA, with one exception. There is “a paucity of peer-reviewed publications on the public health” benefits of disclosure (Worsfield 2006:29).

However, the literature suggests that disclosure has an impact on reducing food borne illness and improving public health. The Danish ‘Smiley’ system resulted in improved efficiency, higher inspection numbers and increased consumer confidence (United States Report for Congress Government Accountability Office (US GAO), 2005). In Los Angeles, the disclosure of information has led to reduced incidences of food borne illness in Los Angeles (Jin and Leslie, 2003; Simon et al 2005; Orange County Grand Jury, 2007). There has been a 20% reduction in hospitalisations related to food borne illness (Simon et al 2005). The authors acknowledge that increased frequency of inspections, additional training of inspectors and enhanced efforts to train food workers and business operators may also have contributed to the reduction of food borne illnesses (Simon et al 2005). The disclosure of information to the public provides a powerful economic incentive for food business operators to provide safe food resulting in significantly improved public health outcomes in Los Angeles (Jin and Leslie, 2003).

In Toronto, the disclosure has improved public confidence, increased compliance, decreased the infringements likely to cause illness and reduced the need to re-inspect (Toronto Public Health, 2002; Scott et al 2005; Thompson et al 2005). The inspection numbers increased by 24% and the standards of hygiene have improved (Scott et al 2004). The purpose of disclosure was to enhance the efficiency and effectiveness of the food safety programme and increase public health (Serapiglia et al 2007). Disclosure system has led to a reduction in food borne illness (Scott et al 2005), (Serapiglia et al 2007). Incidences of campylobacter food poisoning have decreased by over 13% (Serapiglia et al 2007; Scott et al 2005). In Minneapolis, a
reduction in food borne illness and improved hygiene standards in restaurants has been attributed to the disclosure of inspection results and a requirement for food worker training (Reske et al 2007).

In Ireland, Closure Orders and Improvement Orders are published on the FSAI website but there is no system in place for publication of inspection results. The Ombudsman found that the failure to disclose food business inspection reports is an overly restrictive interpretation of the law (O’Reilly, 2004). The legislative constraints on disclosure are not sustainable (Guina-Dornan, 2005).

3.12 Food Poisoning as an indicator

According to Drew et al (2000) the outcome from the inspection service is the reduction or lack of food poisoning incidents in the community. There is a difficulty in making the link between the inspection activities and outputs to the outcomes. Because there may be a long lapse of time between the delivery of the outputs before the outcome becomes obvious it can be difficult to establish the link between the outputs and the outcomes (Bouckaert and Van Dooren, 2003; Sheehan, 2005).

Yapp and Fairman (2003) considered whether food poisoning statistics could be used a performance indicator for the EH Service in the UK. They concluded that it was too difficult to link effectiveness of the food safety services to trends in food poisoning. There is uncertainty in reporting of food poisoning incidents and the source may be not be identified or proved (Yapp and Fairman, 2003; Kramer and Scott, 2004). Various reasons are cited for increased incidences of food poisonings such as increased travel, more dining out, more public awareness, poor hygiene practices and a lack of training in hygiene (Kramer and Scott, 2004).

3.12 Summary

The current performance indicator in the EH Food Control Service is based on the numbers of inspections required by the Service Contract with the FSAI. This is an output rather than an outcome measurement.

Whilst there is some literature demonstrating the attempts of EH Food Control Services to achieve the desired outcomes there does not appear to be a generic performance measurement model that could be applied to all EH Services.
The different approaches to food safety in the literature were examined to determine their suitability and adaptability for use as performance indicators. The use of HACCP type food safety management systems, food worker training, self assessments, and more refined risk assessments were examined for effectiveness in achieving a safe food outcome. Disclosure models were explored to determine if transparency has a role to play in safe food. Food poisoning results may not be a useful indicator for local EH Food Control Services.

The next Chapter will show how the issues extracted from the literature will be explored with Environmental Health Officers (EHOs), Senior EHOs (SEHOs) and Principal EHOs (PEHOs) who are involved in food safety activities. The selection of suitable performance indicators for the EH Food Control Service must include all the stakeholders to ensure relevance and acceptability. The methodology will be discussed in this next Chapter.
CHAPTER FOUR
METHODOLOGY

4.1 Introduction

The literature review (Chapters Two and Three) highlighted the limited research on the subject of performance measurement for the food control activities of the Environmental Health Services. The literature on food safety inspection activities was reviewed and international environmental health policies were examined to determine whether suitable models existed that could be applied in the Irish situation.

The research strategy formulated to meet the objectives of the research is outlined in this chapter. The researcher discusses the reasons for using a mixed methods approach, the sample selections, data collection, methods of analysis, and how the quality, reliability and generalisability are ensured throughout.

4.2 Rationale and Significance of the Study

As outlined in Chapter One there is a need for the EH Services to develop performance indicators. This research is confined to the food control functions. It is hoped that this study will contribute to a better understanding of performance indicators for the EH Food Control Service. Performance indicators will lead to a more informed decision making process and result in a more efficient use of resources. Food safety control is of particular interest to me as I work in the EH Food Control Service. The development of relevant indicators will assist in the delivery of a more strategic service to achieve improved food safety and public health. From a scholarship point of view it is hoped that the findings of this study will be a useful contribution towards developing the discussion on environmental health evaluations leading to the achievement of better outcomes.

4.3 Research Question

The research question posed is:
What are the performance indicators that would demonstrate that the food control activities of the Environmental Health Services are ensuring that food is safe, will not cause illness and is in compliance with the law?
4.3.1 Research Objectives

The key objectives are:

A. Examine the current performance indicators in the Environmental Health Food Control Services.
B. Explore the benefits and the challenges of using performance indicators.
C. Review any existing models for relevance in determining performance indicators for the Environmental Health Food Control Services.
D. Suggest suitable performance indicators for the Environmental Health Food Control Services based on a more detailed analysis of local needs, the analysis of indicators applied in other settings and on the findings reported in the literature review.

4.4 Methodology

The two main options for research methods are qualitative or quantitative. According to Silverman (2005:6), who references Punch (1998), a “researcher knows that the choice of method should not be predetermined, rather you should choose a method that is appropriate to what you are trying to find out”. A combination of both qualitative and quantitative approaches are useful in a mixed methods research (Creswell, 2003; Kumar, 2005). I chose a mixed methods approach to answer the question posed as the literature base was weak and insufficient to guide the formulation of a specific hypothesis. A mixed methods approach was “best suited to the line of enquiry” and helped to form a greater understanding (Starks and Trinidad 2007:1372). Burke Johnson et al (2007) quote Huey Chen’s description of mixed methods research.

“Mixed methods research is a systematic integration of quantitative and qualitative methods in a single study for purposes of obtaining a fuller picture and deeper understanding of a phenomenon.” (Source: Burke Johnson et al 2007:119)

4.5 Methods

The research was mixed methods and was carried out sequentially. There were two different types of data collection, which are described in the following sections under phase one and phase two.
4.5.1 PHASE ONE

The first phase of the research was qualitative as the focus was exploratory. I was trying to find out what was happening on the ground, what were the viewpoints and perspectives of the individuals and what insights could they bring to the study. Leedy (1997) recommends that a qualitative approach works where the question is exploratory, the participants are supportive, time is available and the literature base is weak. He says there should be rapport and interaction between the researcher and the participants. The researcher needs to have the ability to work with the data and reason inductively as well as having narrative writing ability (Leedy 1997). These criteria applied to this phase of the study although time was somewhat limited as the second phase of the study was sequential. I had to complete the first phase before commencing with the second phase. The time scale was feasible as the qualitative phase undertaken was relatively small.

The qualitative research was conducted in two parts. The first part was through a small focus group of four. The focus group participants included both Environmental Health Officers (EHOs) and Senior EHOs (SEHOs) as these were the people who were well placed to give their views on the ‘day to day’ work activities. The participants were from four different parts of the HSE Dublin Mid-Leinster region and representative of Dublin South East City, Dublin South West City, South Dublin and Dun-Laoghaire-Rathdown Food Control. The second part was semi structured interviews with four Principal EHOs (PEHOs), who as managers had important views to contribute to the study. The PEHOs were representative of four different HSE regional areas (see section 4.9).

4.5.2 PHASE TWO

A census of the target population was carried out for the second phase, which took the form of a survey questionnaire. The census was carried out sequentially and included EHOs, SEHOs and PEHOs, in the HSE Dublin North East Region. The findings from the qualitative first phase informed the development of the quantitative questionnaire tool. The results of the survey externally validate the qualitative findings through a wider audience of EHOs.

4.6 Qualitative interview schedule

An interview schedule was prepared in advance to give structure and to guide the topics for discussion. This ensured that the relevant issues were covered. The themes were derived deductively from the literature and used to inform the framework, which was similar for the
focus group and the interviews. The interviews with the PEHOs were semi-structured but allowed flexibility for the interviewees to elaborate on their responses.

The format for the interview schedule included five main sections (see Appendix E).

1. Objectives of the Environmental Health Service (EH Service)
4. Awareness of existing models
5. Suggestions for suitable performance indicators

4.7 Pilot Focus Group

A pilot focus group was undertaken with a group of EHOs in the Dublin area. A last minute cancellation from one participant resulted in a smaller group than had been planned. As it was too late to reschedule the pilot group proceeded with three EHOs. The pilot proved useful in determining that the topics for discussion were clear and unambiguous.

4.8 Focus Group Selection

The focus group was a non probability purposeful sample. The names of the participants were randomly selected from the Environmental Health Officers Association (EHOA) data base. Wilkinson (2004) suggests that a focus group is useful to explore their shared experiences. The size of the focus group was small comprising four participants. According to Morse (2000; 2001) the number of participants does not need to be large to generate a rich data set. Purposive sampling is based “on specific purposes associated with answering a research study’s questions” (Teddlie and Yu, 2007:77). The selection criteria ensured that only EHOs engaged in food safety control activities could participate. The exclusion criteria prevented EHOs from the same geographical work areas from participating in the study. This served to increase diversity and gave a broader perspective.

4.8.1 Data collection

The location chosen for the focus group discussion was an EH Service city centre office as it was convenient for all the participants and it was held at a time suited to everyone. Each participant was given a typed page of the definitions for performance indicators (see Appendix K). This served to dispel confusion and misunderstandings about performance
indicators and led to a rich discussion. The focus group discussion lasted 90 minutes. A digital recorder was used to record the discussions and transcribed immediately afterwards by me.

4.9 Interviews

Initially, I had proposed to conduct a second focus group with an existing group of PEHOs, which was set up to develop suitable performance indicators for the EH Service. However, the group had never formed and instead individual interviews were undertaken with four key regional representatives. Whilst the sample was purposeful the interviewees were not chosen by me. They were suggested by the Assistant Director of Population Health. The interviewees were managers from different geographical areas and were representative of the four HSE Regional areas - HSE Dublin Mid Leinster, HSE Dublin North East, HSE South and HSE West, which gave a diversity to the study. Teddlie and Yu (2007:87) refer to Maxwell’s (1997) definition of purposive sampling which includes the deliberate selection of people “for the important information they can provide” that is not readily available elsewhere. This maxim applied to the interviewees as they were managers of the service.

4.9.1 Data collection

I arranged the interviews with three of the four PEHOs to coincide with a national meeting. The interviews were conducted in a quiet area of the hotel where the meeting was being held. This allowed me to complete three of the four interviews in one day. The interviews varied in length and lasted from between 30 minutes to 50 minutes. The interviews were digitally recorded and transcribed on the same day. The fourth interview took place at a later date following another PEHO meeting. As the interviewee was unwilling to be audio recorded I took comprehensive written notes during the interview. From my point of view this was somewhat distracting as the necessity to write all the details of the interview to ensure an accurate record took from the flow of the conversation.

4.10 Analysis of Qualitative Data

The sequential mixed methods approach that I used required the development of the survey instrument prior to commencement of the second part of the study. The time limits for the research, the fact that I was a ‘novice’ researcher, and the considerable amount of data which needed to be analysed were given due consideration before I decided to use general inductive analysis to analyse the textual data. This approach is similar to grounded theory. It allows the
raw data to be condensed and summarised, it establishes clear links between the objectives of the research and the findings in the raw data and allows the development of a model about the underlying processes in the raw data (Thomas, 2003). One of the underlying assumptions to a general inductive approach is that the data analysis “is determined by both the research objectives (deductive) and multiple readings and interpretations of the raw data (inductive). Thus the findings are derived from both the research objectives outlined by the researcher(s) and findings arising directly from the analysis of the raw data.” (Thomas, 2003:3)

The following table demonstrates the coding process.

<table>
<thead>
<tr>
<th>Table 1: The coding process in inductive analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial read through text data</td>
</tr>
<tr>
<td>Many pages of text</td>
</tr>
</tbody>
</table>

(Source: Thomas, 2003:6)

Table 4.1 Inductive coding process

The data was read several times and sorted into categories or themes, using sub categories for new points of views or different insights as they emerged. The non relevant text was removed and key themes emerged from the data. The top level categories are summarised as the main headings whilst sub headings are used to indicate specific themes. The findings are presented in the following sections.

4.11 Quantitative Survey

The second phase of the study was quantitative using a questionnaire tool developed from the qualitative findings of the first phase and delivered through an anonymous on-line survey. The development of the survey tool in the form of a questionnaire was informed both by extant theory and the emerging inductive theory from the qualitative part of the study. “Typically, the methodology and results from the first strand inform the methodology employed in the second strand” Teddlie and Yu (2007:90). The questionnaire was used to collect empirical data. The use of a structured questionnaire allows the collection of explicit answers in the form of quantitative data which can be readily counted and analysed (Bowling, 1997).
4.11.1 Questionnaire

The questionnaire was concise with only 10 questions. A draft was developed and piloted with three of my colleagues. This helped to ensure that the questions were understandable and that people knew what was being asked. No significant changes were required to the questionnaire but it was apparent that some of the questions were ambiguous in meaning. The questions were reframed to ensure the intended meaning was specific. Three of the 10 questions, numbers 1, 6 and 10, were multiple choices. The respondents were required to indicate the degree of importance they attached to certain activities. The remaining questions required the participants to indicate their responses to one statement on a scale varying from ‘strongly agree’ to ‘strongly disagree’. Question number 1 had a scale of ‘most important’ to ‘least important’ and question 8 had a scale of importance attached to the role of EHO as an enforcer versus the role as educator for the delivery of hygiene education.

The final draft was uploaded on to Survey Monkey, a research website. The Survey Monkey website provided on line collection and ensured the anonymity of the respondents as no identification record was kept. The on-line survey targeted a census group of all grades of EHOs in the HSE Dublin North East Region.

The access link to the questionnaire was distributed to the census group participants by email. The pre defined questionnaires targeted 93 Environmental Health Officers of all grades in the target group working in food control activities in the HSE Dublin North East Region - which included Cavan, Monaghan, Meath and Louth. Access to their email addresses was obtained from the FSAI data base and the EH professional association - Environmental Health Officers Association (EHOA). A letter of introduction was sent with the email inviting the respondents to participate in the survey. As the responses were anonymous the completion of the survey is taken as consent to participate.

4.11.2 Data collection

A total of 93 emails were sent to the potential respondents in the census area of Dublin North East Region. Of those 76 were eligible and the final the total response rate was 47 (62%). The topic was of interest to the respondents which encouraged participation in the survey.

The following table outlines the survey response rate.
Number of EHOs emailed link to Survey | Returned not valid / not deliverable | Returned by EHOs working in non food related activities | Out of office response | Maternity Leave | Emails in census group | Number of completed questionnaires returned to Survey Monkey website | % Returned
---|---|---|---|---|---|---|---
93 | 11 | 1 | 3 | 2 | 76 | 47 | 61.8%

Table 4.2 Survey Response

4.12 Questionnaire Data Analysis

The quantitative online survey questionnaire was processed through the Survey Monkey website. The survey questionnaire was short requiring no more than 5 minutes and could be completed by the respondents at their own desks. I had password protected access to the Survey Monkey website which enabled me to monitor the response activity on the website (See Appendix A). The respondents were sent reminder emails to encourage participation and a thank you email advising them of the closing date. I then downloaded the responses onto a secure password protected computer.

The descriptive statistics of the survey are the main findings. The purpose of the survey was to find the pattern and range of opinions and present the frequency of the different responses. It was a simple analysis and it was not important to try to understand how their views related to other factors such as age, years of experience or position in the EH Service as these were not significant to the study.

4.13 Quality

4.13.1 Access, reflexivity and ethics

The Development of Performance Indicators for the EH Food Control Service is topical and relevant at this time. This meant there was support from the Assistant Director of Population Health, the PEHOs as local managers of the service and the EHOs themselves. Access to the participants was facilitated by my working relationship with the participants and the fact that I am known to them as a colleague. Because of this there was a natural interaction with the
participants, which allows for reflexivity. Reflexivity occurs in qualitative research when there are shared understandings, values, interests, beliefs and experiences of the subject which makes it impossible for the researcher to remain ‘outside’ of the research. I was essentially part of the research from the beginning and I was aware that this could influence the findings.

The topic was not sensitive and no individual data were being generated. Ethical approval was sought and granted by the Faculty of Health Sciences Research Ethics Committee, Trinity College Dublin, on 22nd February 2008. Permission to carry out the research was granted by the Healthcare Research Advisory Committee (HRAC) Dublin North East, on 29th February 2008.

4.14 Contact with participants

All focus group participants and interviewees were first contacted by phone and invited to participate in the study. The phone calls were followed up with emails and letters, which included a Letter of Introduction (Appendix E, Appendix F) detailing the purpose of the study together with Participant Information Leaflets (Appendix I) and Consent Forms (Appendix G). A gatekeeper letter was sent to all the participants inviting their cooperation whilst stressing that participation was voluntary. The consent forms were signed and returned to me by all the participants and interviewees.

The quantitative part of the research was anonymous but the participants were aware of my identity which encouraged participation as I am known to them as a colleague. The return of the questionnaires confirmed consent by the respondents.

The downloaded digital audio recordings are password secured on my computer. The transcribed audio recordings are securely stored in a locked cabinet accessible only by me.

4.15 Reliability & Validity

This study was small as it was limited to a focus group in the HSE Dublin Mid Leinster Region, interviews with PEHOs from the four HSE Regional areas - HSE Dublin Mid Leinster, HSE Dublin North East, HSE South and HSE West and the survey was in the HSE Dublin North East Region. This may limit the generalisability of the findings. The use of multiple methods for data collection, the timely and accurate transcription of data from the focus group and the interviews, and the piloting of the instruments enhance validity of the tools. The content and the face validity were confirmed by the pilot exercise undertaken with
the focus group and by the piloting of the draft questionnaire. It was not possible to externally test validity against another instrument as I was unable to find such an instrument suitable for my topic. I was assisted during the pilot focus group and the focus group by a colleague who helped by taking notes and ensuring that the digital audio equipment was working properly. This contributed to the reliability of the study.

4.16 Summary

The study employed a mixed methods research using qualitative and quantitative approaches to answer the question posed. The qualitative part of the study was undertaken though a focus group and semi structured interviews. The qualitative data were analysed using an inductive process similar to grounded theory. This process allowed the development of a quantitative survey tool in the form of a questionnaire.

The second phase of the study used a quantitative anonymous on line survey facilitated through the Survey Monkey website. The findings are presented in the next Chapter.
5.1 Introduction

A mixed methods research adopting a two phase sequential approach was chosen to answer the question posed. The first part was exploratory using a qualitative method through a focus group and semi structured interviews. All participants were chosen purposively to best inform the research. The data was analysed using a general inductive approach similar to grounded theory. The second phase of the research was evaluative. A structured pre defined questionnaire was developed using inductive and extant theory. The anonymous quantitative survey was undertaken through Survey Monkey and targeted at a census group of the population.

5.2 Objectives of the EH Food Control Service.

All the participants and the interviewees agreed that the objectives of the Service are to ensure “safe food, prevent food-borne illness, high standards of compliance with legislation” and “by the requirements of the service contract with the FSAL.” According to one interviewee “there isn’t a very clear determination of who determines the objectives”. because food safety comes under the remit of several different agencies such as the European Food Safety Authority, the FSAL, the Department of Health and Children, the Department of Agriculture, the Department of the Marine, and others as well as the EH Services. One interviewee believed that “our own objectives have to be dictated by the concerns of the agency for whom we are directly employed, now the HSE and the principal objective of that organisation is to protect public health. Overall that objective of the protection of public health has been determined by our employers.”

5.2.1 Environmental Health Service Plan

One of the interviewees felt that there is a lack of communication regarding service planning and there are “so many different kinds of plans drawing us in all directions.” Local EH Food Control Service plans are drawn up annually but the Principal EHO might “develop an operational plan in isolation of the National Service Plan”, which can result in a lack of “coordination or consistency”. There may be confusion about what it is that the EH Food Control Service hopes to achieve. One of the participants felt that the aims of the EH Food
Control Service are not clear to EHOs “no one has ever stated this is what we hope to achieve, this is what our objectives are and this is what we are going to measure to make sure we are achieving our objectives. We don’t know”. But in contrast to this view one interviewee believed that “each EHO knows what is expected of them, of course”.

5.3 Current Performance Measurement

There was general agreement that the performance indicator is based on the number of inspections, which is a measurement of outputs. One of the participants made the point that the indicator does not measure the results of the inspections and is “based just on numbers of inspections, of numerical output rather than if any changes in behaviour or activities”. One of the interviewees said that “they are mainly output such as number of inspections and slightly performance indicators in that it’s ‘vis a vis’ targeted number of inspections with regards to High, Medium and Low.”

There were conflicting views regarding the value of the current performance indicator. Some felt that the indicator is a useful measure of activity and efficiency levels. According to one participant, “At the moment it is the only measurable thing you have and it is the only way of measuring are we fulfilling the contract”. One of the interviewees believed that “it certainly measures activity level” and that it has “significance in relation to performance.” But another was very critical “I would question their relevance and usefulness to the EH Service. They don’t seem to deal at all with outcome measures, and they really only focus on output measures, and the purpose of them has not been made clear to people on the ground, therefore, it’s very difficult for us to appreciate the relevance and usefulness of them.” One participant concurred with this viewpoint and commented that “I don’t think you can decide on a performance indicator before you decide what to do what your objectives are. The indicator has to come from the objectives. They have to be set first.” This lack of clarity could mean that the current performance indicator may or may not be relevant and “so we are measuring something but we don’t know if that is something we are hoping to achieve in the first place”.

5.3.1 Need to increase the number of activities being measured

There was concern that other EH activities are not being measured because the main focus is on achieving inspection numbers. One interviewee made the point that although the indicator “may be a measure of staff efficiency” it does not take account of “the other work your staff might be doing” which may not be recorded. The participants agreed and felt very strongly
that inspections are “the only thing that is being counted” whilst other important aspects of their work are not being measured.

There were various views on food sampling activities. Some disapproved of the quantity of samples collected particularly for compositional analysis and questioned what “it is contributing to food safety.” Others considered microbiological food sampling useful because “the outcomes of the FSAI surveys that we carry out, microbiological food sampling have been a useful indicator.”

There was a view that the current indicator is not useful for planning future activities. One interviewee felt that “We are not as good at predicting what we want to do or what we are expected to do.” because “we tend to report in arrears at the end of the year.” The target numbers set in the FSAI Service Contract are rarely achieved. The participants believed that despite the failure to achieve the target numbers there is no debate or evaluation regarding whether the resources are adequate to meet the contractual obligations. “But does anyone ever come back if we haven’t reached our targets, and who meets their targets, and what is the result if they don’t? Are we given more resources to meet them? No!”

5.4 Benefits of Performance Indicators

The main benefits of performance indicators are comparability, measuring impact and prioritising. One interviewee felt that “the main benefits are that they are comparable from year on year” to indicate variations in performance and allow the comparison of “regions and maybe between offices.” Also, “you can measure whether you have made an impact or not” and by “being able to compare you can target your resources” and “measure the effect” to ensure “that most priority given to those premises that need it.”

Another interviewee believed that the “value of the outcome measures are that they give you an idea of the trend over a period of time.” The participants felt that performance indicators could be motivational they would account for activities other than numbers of inspections. One of the participants said “I think it is motivational, too I mean it’s supervisory as well, but it is motivational for staff if they can record what they are doing”.

5.5 Challenges to Performance Indicators

There were various views on whether the introduction of performance indicators other than those currently used would be a challenge for the Service. Some suggested that it may require a change of work practice for EHOs. One of the big challenges would be the acceptability
that their performance will be judged by the performance of the FBOs. One interviewee believes “The challenges are the acceptability of whatever performance indicators we set because to a certain extent the food business operators are the ones that have responsibility for food safety”. The interviewee felt that “it may be unacceptable for EHOs to have their performance measured by the performance of the food business operator” and “there would have to be an element of change management.” The interviewee believes that because the main reason for performance indicators is to allow “comparability, to compare different offices working and with another” this could result in “a lot of issues and red herrings being raised such as they have twice as much staff as we have or they only have 50 high risk premises and I have a hundred”. But another interviewee does not think that a change of work practice will be necessary as it will “just be a different way of doing things.”

A performance measurement system will require the national strategic objectives to be filtered down to local level through the area operational plans. But one interviewee believes that this process may be problematic because “the difficulty with any performance indicators is translating the national quality standards into local individual responsibilities and accountabilities as well”

5.5.1 Uniformity, consistency

In order to allow comparability there will have to be consistency and uniformity throughout all aspects of the service. One interviewee said “You have to compare like with like, I think that is very critical.” And “it has to be uniform if you are comparing one area with another there has to be a uniform way of working”. Another interviewee agreed and felt that the “the challenges will be ensuring consistency and having an accurate measure”. Also, “the key is to get it right at the start so you do your assessment at the start, this is the base. Everything is compared back to that.” Another interviewee felt that “consistency is a big concern, the criteria for a scoring system is very important, equity in criteria, consistency in approach and judgement of inspection. You need to be confident that if you say unsatisfactory or significant it is the same in Cork, Galway and Donegal.”

5.6 Suggestions to Improve Performance Measurement

There was a view that the current risk categories which determine inspection frequency are not sufficiently rigorous to differentiate between diverse types of food businesses. There were suggestions that the COP1 should be reassessed to take into account the actual risk posed rather than the type of activity within the food business. This could result in a more effective
and efficient use of resources and allow a more targeted approach. According to one participant, “we have very poor risk assessment process for our premises it’s just been basic. We just do it on the activity of the premises rather than the actual risk from the premises”. This results in the same frequency of inspection for “a coffee shop with lasagnes or something the same as a hospital”.

There was general agreement that all food businesses should be individually assessed to determine how well the risks are controlled. One interviewee said “We should be risk assessing every individual business and taking into account the food business operators, food management, food safety management system and how well they are implementing it”. Not all food establishments require an inspection because according to an interviewee “some premises are already self enforcing and they are very good and very conscientious and I would even go so far there are some premises that don’t need an EHO”. This would free up resources to concentrate on the premises that have poor standards.

### 5.6.1 Inspection scores

There was a general consensus that inspections results should be recorded to enable percentage improvements and disimprovements to be measured. The participants believed that “it is just an underlying goal” to ensure that “every premises is satisfactory” because it is not stated as an objective. They suggested that instead of concentrating on the numbers of inspections completed that “the result of the inspection” would be a better way to measure performance and this result could be used to concentrate on improving the standards in food businesses and for comparison purposes. An interviewee agreed that the inspection visit results “satisfactory or unsatisfactory” should be used to focus on “the really bad ones” to get better results. Another interviewee uses this method in the local area for these purposes and finds it a very useful measurement “as an indication of the effectiveness of the service”.

### 5.7 Food Worker Training

Three of the participants and three of the interviewees felt that food hygiene training of food workers is beneficial towards achieving safe food. Some had a view that the training activity was less important than inspection activities and that the delivery of hygiene education might even be a luxury. There were mixed views on whether the EH Service should be involved in the delivery of hygiene education courses and that it might be a conflict of interests.
One interviewee was concerned that food business operators are not proactive in ensuring food workers are trained and shirk responsibility by relying on the EH Service to provide training. “It is their obligation to be trained and have their staff trained. They should take action to be up to standard”. A participant pointed out that training is widely available for food businesses and it does not have to be the role of EHO. “But does it necessarily have to be us training? They could get their training elsewhere”. One interviewee believed that EHOs are “the more powerful educator”. Most of the participants felt that training was something that was both useful and fulfilling but could not be given priority over the inspection activity. One participant said “I think it is something we would ideally like to do more of but very often we are constrained by the fact that we have to do inspections”. Another participant questioned whether “…the primary responsibility is law enforcement and is Hygiene Education a luxury?” And, “A lot of EHOs have the view that we should not provide training because it is a conflict of interests”. One interviewee believed that “the primary role is to make sure that people comply with the legislation”.

One participant was opposed to the delivery of training because it does not seem to impact on the behaviour of the food handlers. The participant said “…it is behaviour as opposed to training because very rarely will a training session allow a person to change their behaviour…to make safe practice”

### 5.8 Hazard Analysis Critical Control Point (HACCP)

There was a general view that a HACCP type food safety management system should bring about safe food but this is not necessarily so. The participants had conflicting views. One felt that HACCP is “useful but only to a degree” to prevent food poisoning from occurring. One participant said “it should eliminate it if it is working effectively”. But another disagreed “But that’s in theory, that doesn’t work, that’s back in the lab where there’s 100% efficiency, but that doesn’t work”. And “It’s just human error, food poisoning, we cannot eliminate human error. It can improve the situation having a HACCP system but its not going to reduce food poisoning.”

There was concern that the recent flexibility in the legislation regarding the application of HACCP in food establishments has reduced its effectiveness as a control measure. One participant suggested that the EH Service have “spent a good many years promoting HACCP on premises, and now we’re just turning round and saying forget about HACCP”. An interviewee agreed with this viewpoint and felt that the legislation has been “watered down as regards HACCP”.
It was suggested that HACCP “could be used as a measurement” and “we already have a lot of the information” which “could be moulded fairly readily into outcomes.” One participant thought that this could create difficulties if it were to be linked to a reduction in food poisoning episodes because “the thing is, to measure how effective a HACCP system is in reducing the number of food poisonings is going to take a huge number of years.”

There was agreement that food business operators should self audit their own HACCP systems and some of them do. “They should audit their own systems but they are legally not required. I mean some of them are probably not trained enough to do it but some people out there are quite good at doing it, auditing HACCP systems.” One interviewee does not expect all food business operators to self audit particularly the smaller independent operators, “I’m not sure that it would be practical. It might be practical in some of the larger multiples, the larger manufacturers but certainly for the majority of premises the small restaurants, the small shops, smaller businesses I think unless they are organised with their own representative organisations to set up a system it is not something I would be expecting of them.” One of the participants felt that although food business operators have implemented food safety management systems, many with the help of consultants, it is not a working system. “I think the problem with HACCP is that they can just end up with a paper exercise”.

5.9 Food Poisoning

There was a general view that reduction of food poisoning incidences would indicate an outcome but it would be almost impossible for the EH Service to determine given that the sources and the links to food premises are often difficult to establish. One interviewee said “...so if you try to use an outcome like that it is very complex” and “if you were to use food poisoning as a measure...the case definition for what’s a food poisoning incident would be so skewed or so under reported that I don’t know would it be a useful measure?”

5.9.1 Disclosure Model ‘Scores on Doors’ or Internet

The focus group participants had a very animated discussion regarding a disclosure model such as ‘Scores on Doors’. The participants agreed that transparency would very likely lead to safe food but were opposed to the concept of ‘Scores on Doors’. Publishing reports on the internet was seen as a more feasible option. One participant felt “I think the move to give access to our reports on the internet or limited access to certain aspects of it like say the Nursing Homes Regulations might be more manageable”.

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There was a view that the public have a right to inspection information because the EH Service is paid for by the taxpayer. According to one interviewee “It’s a public service, it’s being charged for, it’s a public health protection measure. People are entitled to choice, to informed choice when they are paying for the service to inspect”. The interviewee felt strongly that the failure to disclose information is “doing a grave disservice” and although this may be “uncomfortable” for the EH Service other inspection services such as Nursing Homes and Pre Schools have had to disclose information. There would be “an extra chore to work” for the EH Service but there is no reason “why we shouldn’t do it in relation to food premises.” The interviewee believes that a disclosure system should be introduced to let the public know when the food businesses “were last inspected and what grade they got” either through a score posting system in the food business by the EHO or through a website. Another interviewee strongly agreed that the public have a right to know the standards of food safety in a food business and suggested that the EHOs “are working for all the people out there who can’t be traipsing through kitchens. We do the job for them representing hundreds and thousands of people who eat in any particular place.” There is an obligation on the EH Service to give the public this information and “we should be publishing our figures.”

There were very conflicting views regarding the use of a disclosure system as a performance measure. The participants and two of the interviewees felt that disclosure could not be used as a performance indicator. Some felt that disclosure would serve as a useful function to give information to customers but is not a public health measure. One interviewee thought that disclosure might let “the people have a rough idea of what the standard is like” but would not serve the purpose of “protecting public health.” One of the participants believed that disclosure would not be any different to “recording output numbers of inspections”. Another participant viewed disclosure as “an indicator of how the premises is performing rather than ourselves ‘cos we can’t guarantee all food would be safely produced”. The participants felt that disclosure would not necessarily show “our efficiency whether we got around to it or not”. One of the interviewees believed that disclosure whether through ‘Scores on Doors’ or the provision of “reports of all of our food premises on the internet is a useful performance indicator for the premises and also for us that we are accountable”. However, another interviewee felt that “the performance indicators need to be a bit more scientifically based”.

It was felt that disclosure is a very effective sanction which produces immediate results. “It’s not so much a threat as these are the consequences. The reaction you get when you mention that can in some cases completely turn the premises around.” And, “name and shame is kind of a speedy and effective resolution” because “being negatively publicised is just a no, no for people”. There was general agreement that disclosure could lead to improvement of standards.
because proprietors of food businesses would be motivated more by the effects of disclosure “than a letter on file from us.” The participants believed that disclosure would require changes for both food business operators and EHOs but “from a management point of view it’s probably more effective” than the current lack of disclosure.

Both the participants and the interviewees considered that disclosure would require a change both in the work practice and in the mindset of EHOs. In the words of one of the interviewees “it would require a change in mindset more than work practice.” There may be “an unnecessary fear, a mindset of keeping our cards close to our chest, a mindset that this is confidential between us and the food business.” The participants hoped that a disclosure system would lead to consistency in the application of legal requirements “because we couldn’t be asking for things that are beyond legal requirements.”

5.10 Summary

The objectives of the EH Service are not clear as there is no single EH Service Plan. There are various local area business plans which are independent of each other and may not relate to the HSE National Plan.

The consensus view is that the current performance indicator is an output indicator and is a measurement of the inspection numbers only. Other work activities are not being measured.

There were suggestions that frequency of inspection should be based on individual risk assessment of food businesses rather than the current FSAI Code of Practice. Instead of measuring the number of inspections the results of the inspections could be used to measure increases and/or decreases of food safety standards in those food businesses. The results could also be used for comparison purposes between food businesses in different areas.

There were mixed views on whether a HACCP food safety management system ensures safe food. There were concerns that some food business operators are not adequately trained in self auditing and that some HACCP systems may be a ‘paper exercise’ rather than an effective food safety management system. There is a view that the recent legislative changes which allow flexibility in the application of HACCP may render it less effective as an official control.

Most of the participants and interviewees believed Food Worker/Hygiene Education training is a means to achieve safe food but there was disagreement regarding the effectiveness of
training and about who should provide the training. There were conflicting views about the EHO role in food worker education as an enforcer or as an educator or both.

There was a general agreement that a disclosure model such as ‘Scores on Doors’ and/or publication of inspection reports on the internet would bring about safer food because ‘name and shame’ is an effective sanction. There were marked disagreements about the EHO acceptability of a ‘Scores on Doors’ disclosure system. The participants were negative towards such a system. All the interviewees agreed that disclosure is a public right. Two interviewees believed the system could be used as a performance indicator whilst two disagreed.

The key challenges identified to the implementation of performance indicators were the lack of uniformity and consistency in the EH Food Control Service both individually, locally and nationally. EHOs may find it unacceptable to have their performance measured based on the results of the food businesses that they inspect. The advantages included measuring, comparability, targeting of resources, trend spotting and motivation.

5.11 Quantitative Phase

The second phase of the study undertaken was an anonymous online questionnaire. The questionnaire tool was developed from the qualitative findings of the first phase. The qualitative research findings have been outlined in the previous sections. One of the key themes to emerge was the lack of a strategic service plan. The other key themes were used to frame the ten survey questions. The results of the survey questionnaire are set out in the following section (Appendix L).
5.12 THE DEVELOPMENT OF PERFORMANCE INDICATORS FOR THE FOOD SAFETY FUNCTION OF ENVIRONMENTAL HEALTH

5.13 Relative importance of various Environmental Health Service activities.

Question 1 sought the views of the EHO respondents regarding the importance they attributed to various food safety activities carried out by the EH Services. The reason for this question was that a strong theme emerged from the qualitative research that only one activity is currently measured and other important activities are not. The respondents were asked for their views on the relative importance of six different activities that are regularly carried out by EHOs.

The activities and the responses are shown in the table below.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Most important</th>
<th>Quite important</th>
<th>Somewhat important</th>
<th>Not very important</th>
<th>Least Important</th>
<th>Rating average</th>
<th>Response count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programmed inspections</td>
<td>61.7% (29)</td>
<td>34.0% (16)</td>
<td>4.3% (2)</td>
<td>0% (0)</td>
<td>0% (0)</td>
<td>1.43</td>
<td>47</td>
</tr>
<tr>
<td>Legal enforcement action</td>
<td>34.0% (16)</td>
<td>44.7% (21)</td>
<td>17.0% (8)</td>
<td>2.1% (1)</td>
<td>2.1% (1)</td>
<td>1.94</td>
<td>47</td>
</tr>
<tr>
<td>Enforcement of HACCP or similar</td>
<td>19.6% (9)</td>
<td>37.0% (17)</td>
<td>37.0% (17)</td>
<td>4.3% (2)</td>
<td>2.2% (1)</td>
<td>2.33</td>
<td>46</td>
</tr>
<tr>
<td>Hygiene Education Training (EHOA)</td>
<td>55.3% (26)</td>
<td>31.9% (15)</td>
<td>12.8% (6)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>1.57</td>
<td>47</td>
</tr>
<tr>
<td>Food Sampling</td>
<td>4.3% (2)</td>
<td>38.3% (18)</td>
<td>38.3% (18)</td>
<td>14.9% (7)</td>
<td>4.3% (2)</td>
<td>2.77</td>
<td>47</td>
</tr>
<tr>
<td>Advice</td>
<td>55.3% (26)</td>
<td>40.4% (19)</td>
<td>4.3% (2)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>1.49</td>
<td>47</td>
</tr>
</tbody>
</table>

Table 5.1.1 Importance of activities

5.13.1 Programmed inspections

The majority of the respondents (96%) considered that programmed inspections are most important or quite important to achieve safe food. This result is not surprising as inspections are the main activity of the EH Service and is the only activity currently measured.
5.13.2 Legal enforcement

79% of the respondents considered legal enforcement most important or quite important. This is an expected result as law enforcement is a core function of the EH service.

5.13.3 HACCP enforcement

There was less of a consensus amongst the respondents regarding the enforcement of HACCP where 57% of the respondents were of the view that enforcement of HACCP was most important or quite important and 37% considered it was somewhat important. Given the discussion and views that arose in the focus group and the interviews about the effectiveness of HACCP the survey result is not unexpected. Question 10 in this survey (section 5.22) relates to the flexibility in HACCP. The results will be discussed in Chapter Six (6.4).

5.13.4 Hygiene education

There was a consensus amongst 87% of the respondents that hygiene education for food workers was most important or quite important. This was similar to the views expressed in the qualitative research. Questions 8 and 9 below (sections 5.20 and 5.21) are about the role of the EHO in the training of food workers and the effectiveness of that training. Food worker training will be discussed in Chapter Six (6.5).

5.13.5 Food sampling

There was a wider range of views regarding food sampling. Most responses lie between somewhat important or quite important (both 38% of responses) whilst 19% of the respondents considered that sampling is not very important or least important. The result was in line with the qualitative findings which were also mixed. Food sampling will be discussed in Chapter Six (6.8).

5.13.6 Advice

It is notable that 96% of the respondents considered advice to be most important or quite important.
5.14 Individual risk assessment of food businesses

Question 2 related to the risk categorisation of food businesses which determines frequency of inspection. Individual risk assessment was strongly suggested in the qualitative research as a better way to determine the frequency of inspection than the FSAI COP1. This question was posed to the wider audience of EHOs in the survey to obtain their perspectives.

The following table indicates their responses on a scale of strongly agree to strongly disagree.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Rating average</th>
<th>Response count</th>
</tr>
</thead>
<tbody>
<tr>
<td>34.8% (16)</td>
<td>41.3% (19)</td>
<td>8.7% (4)</td>
<td>15.2% (7)</td>
<td>0% (0)</td>
<td>2.04</td>
<td>46</td>
</tr>
</tbody>
</table>

Table 5.2.1 Individual Risk Assessment

The table shows consensus amongst respondents that individual risk assessment would be a better way to determine the frequency of inspection whilst 15% only disagree. The results are supported by points made in the qualitative findings. This will be discussed in Chapter Six (6.3).

5.15 Measure inspection results to assess compliance

Question 3 was about using inspection results as a measurement of compliance. This was one of the suggestions for performance indicators made by the participants and interviewees. The respondents were asked to indicate their views on a scale of strongly agree to strongly disagree with the statement: ‘The outcome of inspections measured against previous results, to give a percentage improvement/or disimprovement, is a useful way of assessing levels of compliance’.

The following table indicates their responses.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Rating average</th>
<th>Response count</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.8% (6)</td>
<td>53.2% (25)</td>
<td>14.9% (7)</td>
<td>12.8% (6)</td>
<td>6.4% (3)</td>
<td>2.47</td>
<td>47</td>
</tr>
</tbody>
</table>

Table 5.3.1 Inspection results measurement
Table 5.3.1 shows that 66% of the respondents agree or strongly agree that the results of inspections would be a useful way to assess levels of compliance whilst 19% disagree or strongly disagree and 15% of the respondents were neutral. This will be discussed in Chapter Six (6.3.1).

5.16 ‘Scores on Doors’

Question 4 related to the posting of inspection results in a food business following an inspection, similar to ‘Scores on Doors’ in the UK, or ‘Smileys’ in Denmark. The question sought the EHO views on whether such a system should be introduced in Ireland as an official control.

Their responses are shown in the following table.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Rating average</th>
<th>Response count</th>
</tr>
</thead>
<tbody>
<tr>
<td>31.9% (15)</td>
<td>38.3% (18)</td>
<td>12.8% (6)</td>
<td>14.9% (7)</td>
<td>2.1% (1)</td>
<td>2.17</td>
<td>47</td>
</tr>
</tbody>
</table>

Table 5.4.1 ‘Scores on Doors’ disclosure

It is notable in table 5.4.1 that 70% strongly agree or agree that such a system should be introduced as an official control whilst 17% disagree or strongly disagree. This result is somewhat surprising. There had been limited enthusiasm from the participants in the qualitative study for this type of disclosure and I expected similar views from the respondents who were drawn from similar grades of EHOs. This will be discussed further in Chapter Six (6.6).

5.17 Internet disclosure

Question 5 was regarding whether internet disclosure of inspection results should be introduced as an official control in Ireland. The purpose of this question was to elicit the views of the EHOs on whether it is appropriate to disclose inspection results on the internet.

The responses are shown in the following table.
Table 5.5.1  Internet disclosure

The table shows a wider spread of views from strongly agree to strongly disagree. 32% of the respondents agree or strongly agree that inspection results should be posted on the internet. An equal percentage was neutral and 36% disagree or strongly disagree. As in question four, the survey views differ from the participants in the qualitative study who favoured internet disclosure over ‘Scores on Doors’. The survey responses show less enthusiasm for internet disclosure. This will be discussed in Chapter Six 6.6).

5.18  Uniformity, consistency in work practices

Question 6 was concerned with the work practices of the Environmental Health Services that might need to be addressed if disclosure systems were introduced in Ireland. Concerns regarding consistency and uniformity in work practices were a constant theme in the qualitative research. The purpose of the question was to elicit EHO views about the need for uniformity in decision making criteria, a consistent approach amongst EHOs individually and EH offices generally and consistency in approaches to enforcement actions on a national basis.

Their responses are shown in the following table.
Table 5.6.1 Uniformity, Consistency in Work practices

The table shows that there is an overwhelming consensus amongst the respondents regarding the need for uniformity and consistency in work practices.

5.18.1 Consistent approach, consistency

It is noteworthy that all those surveyed agree or strongly agree about the need both for a consistent approach amongst EHOs in grading/scoring a food business and consistency between Environmental Health Offices throughout the country.

5.18.2 Uniformity, consistent approach nationally

98% of the respondents strongly agree or agree with the need for uniformity in decision making and 96% strongly agree or agree there is a need for a consistent approach to enforcement nationally.
5.19 Disclosure of inspection results would make EHOs adhere strictly to legal standard.

Question 7 was regarding whether disclosure systems such as ‘Scores on Doors’ or internet publication of inspection reports would lead to a stricter adherence to legislative requirements by the EHOs when requiring remedial action. It should be understood that the legal requirement is the minimum acceptable standard and EHOs often recommend works to bring food businesses to a higher standard. The purpose of the question was to identify whether EHOs believed a disclosure system would prevent them requiring corrective action that might exceed the minimum legal requirements or in the words of a participant “things that are beyond legal requirements”.

The results are shown in the following table.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Rating average</th>
<th>Response count</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.4% (11)</td>
<td>51.1% (24)</td>
<td>17.0% (8)</td>
<td>6.4% (3)</td>
<td>2.1% (1)</td>
<td>2.13</td>
<td>47</td>
</tr>
</tbody>
</table>

**Table 5.7.1 Legal requirements**

The table shows that 75% of the respondents strongly agree or agree that disclosure would result in EHOs adhering to legislative requirements when requiring remedial action by the food business operators. This result is hardly surprising as it relates to consistency in work practices similar to that posed by question six above (section 5.18).

5.20 EHO Role – Educator or Enforcer

Question 8 was about the different roles an EHO can have such as educator and/or enforcer. The qualitative research found that there was disagreement regarding what role the EHO should have regarding food worker training. The purpose of the question was to elicit EHO perspectives on whether the EHO role is that of enforcer or educator or both. The results are shown in the following table.
### Table 5.8.1 Educator or Enforcer role

The majority of the respondents (64%) believe the EHO role is a combination of enforcer and educator whilst 28% believed that the role of EHO is mostly enforcer.

#### 5.21 Effectiveness of hygiene education courses given by the EH Service.

Question 9 wanted to establish whether EHOs believed that their training courses were effective. The results are in the following table.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Rating average</th>
<th>Response count</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.4% (11)</td>
<td>59.6% (28)</td>
<td>14.9% (7)</td>
<td>2.1% (1)</td>
<td>0.0% (0)</td>
<td>1.96</td>
<td>47</td>
</tr>
</tbody>
</table>

#### Table 5.9.1 Effectiveness of hygiene education provided by EH Service

The table shows that 83% of the respondents believe that the training courses are effective. Food worker training is discussed in Chapter Six (6.5).

#### 5.22 Flexibility in HACCP

Question 10 concerned the flexibility allowed in HACCP by recent legislative changes, which in the view of an interviewee has “watered down” HACCP. The question wanted to find out whether EHOs believed that the flexibility makes HACCP less effective as an official control in certain areas such as the use of non numerical critical limits, temperature control, monitoring and recording by exception. The fourth part of the question was about HACCP training for food workers which does not need to be formal. The results are shown in the following table.
### Table 5.10.1 Relaxation in legislation HACCP

The table shows that there is a strong consensus that flexibility has reduced the effectiveness of HACCP in all of the four areas specified in the question.

#### 5.22.1 Non numerical critical limits

There is somewhat more variation in the range of views regarding the use of non numerical critical limits where 23% of the respondents are neutral and 17% disagree or strongly disagree.

#### 5.22.2 Monitoring of temperature gauges

The monitoring of temperature gauges drew 83% of the total responses in the strongly agree or agree range with 11% in the strongly disagree or disagree range.

#### 5.22.3 Recording by exception

72% of the respondents strongly agree or agree that recording by exception makes it a less effective control, 13% remained neutral and 15% were in the strongly disagree or disagree range.
5.22.4 Lack of requirement for formal HACCP training

72% of the respondents strongly agree or agree that the lack of mandatory requirement for formal HACCP training reduces effectiveness, 15% were neutral in their views and 13% were in the strongly disagree or disagree range.

The survey results for question ten were not unexpected as the qualitative research showed that there was a lack of enthusiasm for the flexibility in HACCP. The responses have specified some of the areas that are viewed as a cause for concern by the EHOs including the lack of mandatory training of food workers.
CHAPTER SIX

DISCUSSION AND CONCLUSIONS

6.1 Introduction

This research sought to answer the question:

What are the performance indicators that would demonstrate that the food control activities of the Environmental Health Services are ensuring that food is safe, will not cause illness and is in compliance with the law. The following discussion will attach meaning to the findings in Chapter Five by linking them to the literature, drawing conclusions from the findings and making recommendations for the development of performance indicators.

The key objectives are:

A. Examine the current performance indicators in the Environmental Health Food Control Services.
B. Explore the benefits and the challenges of using performance indicators.
C. Review any existing models for relevance in determining performance indicators for the Environmental Health Food Control Services.
D. Suggest suitable performance indicators for the Environmental Health Food Control Services based on a more detailed analysis of local needs, the analysis of indicators applied in other settings and on the findings reported in the literature review.

Literature on performance measurement was examined and the terminology was defined. The literature base was weak on relevant performance measurement systems for the EH Food Control Services. In the literature there are different approaches to the inspection activity that focus on the outcomes rather than outputs. These approaches were examined to determine whether the food safety activities discussed in the literature could be considered as performance indicators and form a basis from which to develop a performance measurement system. The research agreed with some of these approaches but there were divergent views.

Mixed methods research was undertaken using qualitative and quantitative methods. The qualitative research included a focus group with EHOs and SEHOs and individual semi-
structured interviews with PEHOs. The findings from the first phase were used to develop a questionnaire for the second phase. The second phase was a sequential quantitative survey and involved a census of EHOs in the Dublin North East Region of the HSE using the questionnaire in an anonymous online survey through Survey Monkey.

The literature on inspection activities such as risk assessment, evaluation of inspection results, HACCP and food worker training were examined to determine their effectiveness towards achieving a safe food outcome. The effectiveness of disclosure models was examined. The current performance indicator was examined and found to be limited to one activity only. The benefits and challenges of using performance indicators was explored. These will be discussed in the following sections.

6.2 Current performance

According to Shellhorn (2007) all aspects of the service must be aligned to ensure that the goals, activities and resources will achieve the outcomes. The research shows that there is a lack of an overall strategy setting out the objectives of the EH Food Control Service. Without ongoing review of day to day activities there is no assurance that the activities (outputs) are contributing to the achievement of the strategic outcomes. There is more focus on the requirement to carry out inspections than on the other obligations set out in the Contract resulting in a reduced emphasis on other activities. This imbalance needs to be addressed.

The inspection activity is a core function of the Service but represents an output rather than an outcome (Drew, 2000; Beck and Johnson, 2006). The participants and the interviewees agreed that the current measurement is an output only. In the absence of other performance measures it does provide a measurement of activity levels but cannot be considered as an outcome. Armstrong (2006) advises that before setting the objectives there should be clarity regarding the outputs and outcomes that are being sought. The outputs need to be defined and there should be "an agreed standard of performance" built in for the qualitative outcomes to ensure the quality is maintained (Armstrong, 2006:60). The use of inspection numbers alone rather than their outcomes is inadequate. Indicators are only useful if the right things are being measured (Stout, 2007). Without an evaluation of all the activities it is difficult to know which outputs to focus on to achieve the strategic objectives.

There can be goal displacement resulting in perverse outcomes such as measuring the wrong things when the emphasis is on the incorrect activity (Malley, 2007). All activities must be measured to ensure that important aspects of the work are not ignored (Drew et al 2000). The research found that important work is not being measured in the Irish EH Service. The survey
(Table 5.1.1) shows other activities such as advice was considered most important or quite important by 96% of the respondents, which was similar to the response for programmed inspections. There was a strong consensus amongst the respondents regarding both the importance of hygiene education for food workers and legal enforcement with responses of 87% most or quite important and 79%, respectively. HACCP was considered most or quite important by a lesser majority (57%). The responses showed that food sampling was considered most important or quite important by 43%. None of these activities are measured. This suggests that there is a critical need for a service plan clearly setting out the strategic objectives of the EH Food Control Service, which are compatible with the FSAI Service Contract. The performance indicators chosen should be based on the objectives and drive the activities to achieve the desired outcomes (Audit Commission, 2000a; Department of Finance, 2004). In turn the goals of the local operational plans should be aligned to the corporate plan by setting SMART targets for teams and individuals to achieve the objectives of the organisation (Audit Commission 2000a). This would help to clarify the roles at all levels of the organisation to meet the corporate objectives.

Beck and Johnson (2006) disapprove of using lists of inspections as a performance indicator as the activity is not an outcome and cannot be used to report value to the organisation leaders. There was consensus in the research that the use of inspection numbers is of little value and does not measure any change in behaviour. Goebbels (2005) believes that inspections can only be effective if it is clear what they hope to achieve. There is a danger that the numbers may become an end in themselves.

Keene (2007) is concerned that the focus on inspections rather than taking a proactive approach is preventing the delivery of the full range of environmental health services to the public. This concern seemed to be borne out in the research which highlighted that activities are reported at year end rather than planned in advance “we tend to report in arrears” and “We are not good at predicting what we want to do or what we are expected to do.” However, these comments may refer to the lack of an overall strategic plan for the EH Food Control Service as local area operational plans are prepared annually in advance outlining the work plan for the year.

No relevant models for performance measurement systems for the EH Food Control Service were found in the literature other than the Toolbox in the UK (CIEH Toolbox, 1999), which was reviewed in the literature in Chapter Two. A framework called the Logic Model Roadmap adapted from USDA CSREES (Stout, 2007) was presented in Chapter Two.
literature suggested that various approaches could be used to improve food safety outcomes. These measures could be used to form a basis for performance measurement.

6.3 Risk Assessment

The literature recommends a risk based inspection process (Boehnke, 2000; Hampton, 2005; Stryker, 2005; Wheeler, 2006; Reske et al 2007. Hampton (2008) argues that a risk based approach will protect public health by focusing on those establishments that pose the greatest risk. The Irish system already uses a risk based approach. An emergent theme from the qualitative research suggests that the current risk categorisation mechanism set out in the FSAI (2006b) COP1 is too rigid and does not allow for adequate differentiation between diverse business types. The survey results (Table 5.2.1) confirm this view and show strong support for individual risk assessment of all food establishments.

It seems logical that all establishments should be appraised separately. Individual risk categorisation should allow greater variation to inspection frequencies resulting in a more targeted approach. But there can be no foregone conclusion that individual risk assessments will give a better outcome. The inspection numbers required by the FSAI Contract are rarely achieved (FSAI, 2006a). The underlying reasons for not reaching the targets set in the Service Contract should also be examined as there may be common factors that need to be addressed to achieve a more efficacious service delivery. Regardless of whether or not the FSAI (2006b) COP1 is amended there is an opportunity to refine the current risk measurement system as has been done in Donegal (discussed in Chapter 3).

6.3.1 Evaluation of Inspection Results

Mosse and Sontheimer (1996) stress that indicators must show whether the activity has been useful or not. One of the emergent themes from the qualitative research was that inspection results could be used to evaluate progress and compare results. Question three of the survey results (Table 5.3.1) shows that 66% of the respondents strongly agree or agree that inspection results would be a useful way to measure levels of compliance. Wealleans (2001) says information must be worth collecting. The use of inspection results as an indicator would allow resources to be used more effectively by allowing analysis of the data to lead to a more targeted approach. Rather than using numbers of inspections as an indicator, the number of food establishments which have attained at least the minimum standards to be considered satisfactory can be measured. According to Armstrong (2006) all jobs have components that are difficult to measure quantitatively so it is important to agree on an acceptable performance
standard which must be met so that the outcomes can be compared with the expected outcome. The inspection outputs will result in the desired outcomes when the agreed standard of performance has been reached.

The evaluation of inspection results would not require any major changes to the current practice as the information is already collected and recorded but is not used to measure performance. Yapp and Fairman (2003) believed that objectivity and the lack of consistency in the EH Food Control Services would be difficult to overcome in such a system. The research agreed that inconsistency and the lack of uniformity are problematic in the Irish context. The refinement of the risk assessment process and the evaluation of inspection results could be achieved without major changes to the current work practice but the lack of consistency in the service is a seen challenge to these processes.

6.4 HACCP type food safety management systems

The literature emphasises that a HACCP type food safety management system together with educated food workers and self audit by the food business operators will achieve a safe food outcome (Mullen et al 2002; Worsfield et al 2004; Stryker, 2005; Thompson et al 2005; Wheeler, 2006; Reske et al 2007). This suggests that a performance indicator to measure HACCP compliance in food establishments should be introduced. Armstrong (2006) advises that present levels of performance must be known before any improvements can be made. The baseline HACCP surveys carried out by the EH Services and the FSAI as part of a HACCP Strategy have established the levels of compliance in targeted sectors of the food industry (FSAI, 2004; FSAI, 2006d). The current ongoing HACCP survey will help to establish the level of compliance in restaurants of greater than 50 seats. These results are necessary to measure future improvements. The strategy has resulted in increased compliance levels as a result of EHO intervention (FSAI, 2004; FSAI, 2006d). The use of HACCP as a performance indicator for all inspection activities on a continuous basis would focus attention on compliance and drive standards to a higher level. This should be a robust indicator of the day to day activities.

The research findings are ambiguous regarding the effectiveness of HACCP. The focus group and interviewees were in agreement that HACCP is useful and should result in safe food but it does not necessarily work. Some FBOs have high standards of food safety and do not need inspection but there are many who do not meet this standard. This may be because HACCP is often a “paper exercise” rather than an operational food safety management system. When HACCP was first introduced in Ireland many FBOs engaged consultants to assist them in the
implementation of HACCP. This may have resulted in a lack of ownership of their food safety management systems and possibly a lack of understanding of the concept.

There were some views that HACCP is not practical for smaller food businesses and is more useful for large manufacturing plants or chain food operations. In practice the principles of HACCP can be readily applied to large manufacturing and franchised food establishments, who have the resources and expertise unlike smaller independent FBOs. The flexibility introduced by the more recent legislation sought to address these inequalities and reduce the burden for small FBOs. Hampton (2005) believes that small businesses should not be encumbered by overly prescriptive legislative requirements which are a barrier to economic progress. The research shows that EHOs believe that flexibility reduces the effectiveness of HACCP as an official control. The questionnaire result (Table 5.1.1) shows that 57% of the survey respondents considered that enforcement of HACCP type food safety management systems was most or quite important whilst 37% considered it to be somewhat important. There does not appear to be full confidence amongst EHOs that HACCP can achieve a safe food outcome.

The HACCP flexibility allows variations in the practice of measurement but is not intended to reduce responsibility for controlling the risks. A participant felt that flexibility has resulted in the EH Service “turning round and saying forget about HACCP”. The survey results (Table 5.10.1) show that EHOs believe that flexibility in such areas as the use of non numerical critical limits, temperature control, monitoring and recording by exception makes HACCP less effective as an official control. The results also show that the lack of mandatory requirement for food worker training in HACCP reduces the effectiveness of HACCP.

The results may suggest that there is a misunderstanding about flexibility or the approach is unclear. It is difficult to know whether these findings are specific to the Irish situation or if similar problems have arisen elsewhere since the introduction of the more flexible approach to HACCP. The qualitative research found that there is a concern that many FBOs may not have been trained to self audit. This finding concurs with those of Taylor (2001) and Fairman and Yapp (2004) and also mirrors the results of the HACCP surveys in Ireland where the main barrier to compliance was the lack of FBO skill (FSAI, 2004; FSAI, 2006d). According to Higgins and Hartfield (2004) if underlying causes are not dealt with there will be repeated infringements and this will be unlikely to lead to a safe food outcome.
6.5 Food Worker Training

Roberts and Deery (2004) believe that the EH Food Control Services should provide effective education and training to FBOs. Stryker (2005) wants the EH Food Control Service to work with FBOs to change their attitudes and behaviours. The qualitative research showed that there is support for food worker training but there are diverse views on whether the EH Food Control Services should offer formal education services to food workers. An emergent theme in the research was regarding the conflicting roles of the EHO as an enforcer, an educator or both. There was a view that the provision of education to food workers by EHOs could be at variance with the enforcement role. The survey results (Table 5.8.1) supported the combined educator/enforcer role of the EHO and showed agreement that the food worker education services delivered by the EH Food Control Services are effective (Table 5.9.1).

A view that inspections should take priority over the delivery of training may be due to the overall focus on the inspection activities only. The survey (Table 5.1.1) shows that training is considered a most or quite important activity by 87% of the respondents. Drew et al (2000) warns that a narrow approach can result in activities being ignored. Stout (2007) advises the continuous monitoring of programmes must be carried out at all times. Without a means of evaluation there is no way of measuring the usefulness of the training. Food worker training could provide a performance indicator but the current lack of strategic objectives and specific targets hinders this possibility at present.

6.6 Disclosure

There is strong evidence in the literature that disclosure reduces food borne illness and improves public health (Jin and Leslie, 2003; Simon et al 2005; Orange Grand Jury, 2007). The qualitative results agreed that disclosure could result in safer food. The responses varied somewhat between both the participants and the interviewees with the participants expressing opposition towards a ‘Scores on Doors’ type of disclosure whereas the publishing of inspection reports on the internet was seen as a more acceptable option. Interestingly, the survey results showed more widespread support for a ‘Scores on Doors’ type of disclosure (Table 5.4.1) and less enthusiasm for internet disclosure (Table 5.5.1). It is likely that any disclosure system would involve a combination of both systems as this has been the experience elsewhere.

It may be that disclosure works because it acts as an economic incentive (Jin and Leslie, 2003). The participants and the interviewees agreed with this view as customers are unlikely
to patronise establishments with a bad score. Disclosure may contribute to a change in behaviour which is the desired outcome and may be a necessary step in the achievement of those outcomes. The interviewees agreed with disclosure but their views were divided regarding its use as a performance indicator. Some felt that disclosure would not be any more useful than the legal sanctions currently used. There will need to be a clear understanding of the difference between outputs and outcomes before the development of performance indicators. The outputs will help to achieve the outcomes which are the consequences of the actions of the organisation which results in changes of knowledge, behaviour or attitude, conditions or events (Bouckaert and Van Dooren, 2003; Stout, 2007).

Disclosure of inspection results could be an important step in achieving the necessary changes in behaviour among the FBOs. There is no routine disclosure of inspection results in Ireland at present. Disclosure requires clarification of the legal situation.

6.7 Food poisoning

The literature recognised the difficulty linking the activities of the EH Food Control Service to reductions of food borne illness in the community (Drew et al 2000; Yapp and Fairman, 2003). The number of people suffering from food borne illnesses is an indicator of public health but it is not a good guide for day to day activities for the EH Food Control Services. Local targets should be based on measurable outputs which help to achieve the organisation’s outcome related goals (Drew et al 2000). The qualitative research agreed that there are many difficulties in trying to link activities with food borne illness results, many of which may have originated elsewhere.

6.8 Sampling

Half of the UK EH Food Control departments do not believe that the food sampling activity prevents food borne illness (Wong et al 2004). The research indicates there are mixed views regarding sampling. Some consider it to be a useful indicator whilst others do not believe it adds any value to food safety. 43% of the survey respondents consider that sampling is a most or quite important activity (Table 5.1.1). Food sampling is an important aspect of the EH Food Control work as the results can enhance the findings of the inspection activities and highlight infringements. There may be a need for a more targeted approach to the sampling activities. Strategic planning can make sampling more effective and efficient as part of the overall objectives to ensure that the desired outcome is achieved.
6.9 Benefits of performance indicators

The benefits of performance indicators include setting of priorities, measurement of progress, comparability of results, identification of trends, the setting of output and outcome targets (Drew, 2000; Audit Commission, 2000a; Armstrong, 2006b). The qualitative research concurred with these benefits and the participants also suggested that performance indicators can act as motivators. Alternatively, there can be a lack of motivation if work contribution is unacknowledged. This agrees with Armstrong (2006) who asserted that role clarity can boost morale. There was consensus in the research that all activities carried out by the EH Food Control Service should be acknowledged and measured which agrees with Drew et al (2000). The benefits will improve public health and provide a more effective and efficient service.

6.10 Challenges to performance indicators

There was strong agreement in the research that there is a lack of consistency amongst EHOs individually, regionally and nationally. This was not reflected in the literature other than in Yapp and Fairmann, (2003) who believed inconsistencies and a lack of objectivity would impede the comparability of inspection scores amongst local authorities. The research supports the need for uniformity in decision making. There was unanimous agreement among the research participants that there should be consistency in the grading or scoring of food establishments. In addition, there should be a consistent approach to enforcement. An interviewee suggested that there might be opposition to a change in work practice to allow comparability which could result in “red herrings” being raised regarding resources. These issues would have to be addressed prior to making any changes to the work practices and in the words of an interviewee “the key is to get it right at the start”.

The research suggested that EHOs may not find it acceptable to have their performance judged by the performance of the FBO. This is understandable particularly where an EHO has responsibility for the inspection of food establishments that do not have adequate standards of food safety. However, the change in behaviour among FBOs is the desired outcome and to achieve this there needs to be consistency and comparability of the results. The number of evaluative inspections carried out is a good measure of EHO output but it ignores the qualitative aspects of the work such as advising FBOs which is critical to achieving change of behaviour.
6.11 Limitations

This research was aimed at the EH Food Control Service. Inclusion of the Food Safety Authority of Ireland would have enhanced the research. This was not within the scope of the study.

The study was limited by the lack of related research in performance measurement systems for the EH Food Control Service. The literature reviewed was related to the effectiveness of EH Food Control Services activities rather than performance measurement. However, the studies reviewed were relevant to achieving safe food outcomes.

The focus group participants and the interviewees were chosen purposively as they could best inform the research question and the objectives. They provided a valuable insight into the current practices in the EH Service. The focus group participants represented the EHO perspective whilst the PEHOs gave a management point of view. Because of their roles in the EH Service they were interested in the development of performance indicators. The findings from the qualitative research contributed towards the development of the survey instrument, which was used for the census survey in the HSE Dublin NE Region. The size of the qualitative part of the research was small with one focus group and four interviews in total. For practical reasons the study could not have been done on a wider scale. The participants and the interviewees were not necessarily fully representative of their peers and the survey census was restricted to one regional area. However, there were no a priori reasons for thinking that any opinions or any aspects of performance indicators for the EH Service should be geographically different. The results may have generalisability nationally for the reasons that the survey area of HSE Dublin NE region is a mixture of city, urban and rural areas and the respondents were representative of the different EH grades; EHO, SEHO and PEHO. The focus group participants were representative of SEHO and EHO grades in the Dublin Mid-Leinster region only but the interviewees were PEHOs from each of the four HSE regional areas.

6.12 Conclusions

The data from the research suggest that the following performance indicators should be introduced: evaluation of inspection results, food worker training, HACCP, and disclosure of inspection results.
The evaluation of inspection results will identify problem areas and will allow targeting of resources in those areas. This can be implemented without any major changes to current practice. The effectiveness of the service will be improved as such a change will allow critical evaluation of operational activity and changes can be made to improve food safety and compliance with the law. Individual risk assessment should be introduced in tandem with evaluation of inspection results as this will free up resources in the EH Service to concentrate on high risk food businesses and can be viewed as improving efficiency rather than effectiveness.

From the strategic objectives there needs to be a more focused and targeted approach to food worker education. The percentage of workers who have received food hygiene training is a potential performance indicator as it is known from the literature that food businesses with trained food workers are less likely to have problems. The extent of the involvement of the EH Service in the provision of training must be specified in the service plan and communicated and acted on at local levels as part of the operational plan.

There should be wide consultation with all stakeholders to clarify if the approach to HACCP is unclear and whether the recent flexibility may have given rise to uncertainties. Following clarification a uniform approach should be taken to ensure greater compliance and understanding amongst food business operators. The percentage of food businesses with a fully functioning and compliant HACCP system should be introduced as a performance indicator as food businesses with a food safety management system are less likely to have food safety problems.

There should be clarification on the legal status of disclosure of inspection results with a view to introducing some form of disclosure. The research established that consistency issues must be dealt with to allow evaluation and comparison but more importantly to enhance the transparency of the Service and to smooth the transition to disclosure when it occurs. The introduction of a disclosure system modelled on successful systems in other countries is a key indicator for the development of the service as this alone significantly improves compliance of food business operations. The service plan must have a stated objective of introducing a disclosure system and reviewing its effectiveness.

The research established that there is a critical need for a service plan outlining the strategic objectives of the EH Food Control Service. Performance indicators cannot be chosen in isolation of a service plan as the activities must be linked to the achievement of strategic objectives. The performance measurement system must include all activities to prevent undue
focus on some activities to the exclusion of others. Any of the suggested performance indicators will not achieve the desired outcomes unless they are specifically identified and supported in the service plan. Without this there is unlikely to be any change at the operational level.

The output measures that will support the achievement of the strategic objectives must be further refined and agreed with all the stakeholders. The various activities/outputs should be regarded as tools towards achievement of the desired outcomes. The mix of tools used will vary in emphasis and over time. The design and implementation of suitable indicators following stakeholder involvement will allow evaluation and improvement of the services which will enhance the accountability of EH Food Control Services to the public and increase their contribution to public health.

6.13 Further Research

To complement this research the following is proposed:

The determination of what level of outputs is required to achieve strategic outcomes of the EH Food Control Service.

An evaluation of the effectiveness of any performance indicators chosen should be undertaken.
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Appendix A

Survey Monkey Response Browser

Browse Responses
Logged in as “Geraldine Feehan” Log Off

Displaying 47 of 47 respondents

| 1. 1. Please indicate the importance of the following activities carried out by the Environmental Health Service to achieve safe food. |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
|                                   | Most important (1)               | Quite important (2)              | Somewhat important (3)           | Not very important (4)           | Least important (5)               |
| Legal Enforcement Action          | X                                |                                  |                                  |                                  |                                  |
| Advice given by EHO               | X                                |                                  |                                  |                                  |                                  |
| Food Sampling                     |                                  |                                  |                                  |                                  |                                  |
| Hygiene Education Training (EHOA) for food workers |                       |                                  |                                  |                                  |                                  |
| Enforcement of HACCP or similar   | X                                |                                  |                                  |                                  |                                  |
| Programmed Inspections            | X                                |                                  |                                  |                                  |                                  |

Comments:

2. 2. The classification of food businesses, in accordance with COP1, can result in a similar risk categorisation for very diverse food business types (e.g. a coffee shop selling lasagne shares the same High risk category as a large hospital kitchen). Would INDIVIDUAL RISK ASSESSMENT for every food business be a better way than COP1 to determine frequency of inspections?

<table>
<thead>
<tr>
<th>Strongly Agree (1)</th>
<th>Agree (2)</th>
<th>Neutral (3)</th>
<th>Disagree (4)</th>
<th>Strongly Disagree (5)</th>
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<tr>
<td>Please tick the relevant box with your answer.</td>
<td>X</td>
<td></td>
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</table>

Comments:

3. 3. The outcome of inspections measured against previous results, to give a percentage improvement/or disimprovement, is a useful way of assessing levels of compliance.

<table>
<thead>
<tr>
<th>Strongly Agree (1)</th>
<th>Agree (2)</th>
<th>Neutral (3)</th>
<th>Disagree (4)</th>
<th>Strongly Disagree (5)</th>
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<tr>
<td>Please tick the relevant box with your answer.</td>
<td>X</td>
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</table>

Comments:

4. 4. From your perspective, should a disclosure system such as ‘Scores on Doors’ as in the UK, or ‘Smileys’ as in Denmark, whereby inspection results are displayed in the premises, be introduced as an official control in Ireland?

<table>
<thead>
<tr>
<th>Strongly Agree (1)</th>
<th>Agree (2)</th>
<th>Neutral (3)</th>
<th>Disagree (4)</th>
<th>Strongly Disagree (5)</th>
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<td>Please tick the relevant box with your answer.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Comments:

5. From your perspective, is it appropriate to have disclosure on the internet of inspection results (including infringements and remedial action required) as an official control?

<table>
<thead>
<tr>
<th>Strongly Agree (1)</th>
<th>Agree (2)</th>
<th>Neutral (3)</th>
<th>Disagree (4)</th>
<th>Strongly Disagree (5)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Comments:

6. The following Environmental Health Service work practices would need to be addressed if disclosure systems such as ‘Scores on Doors’ as in UK, or Disclosure of Inspection reports on the internet were to be introduced as official controls in Ireland

| Uniformity in decision making criteria. | X |
| Consistency between Environmental Health Offices in general throughout the country. | X |
| A consistent approach to enforcement actions nationally. | X |
| A consistent approach amongst EHOs in grading/scoring food businesses. | X |

Comments:

7. From your perspective, if official controls included DISCLOSURE OF INSPECTION RESULTS (as in ‘Scores on Doors’ and/or Inspection Reports on the Internet), would it make EHOs adhere strictly to LEGAL REQUIREMENTS as opposed to RECOMMENDATIONS when requiring REMEDIAL ACTION by the food business operators?

<table>
<thead>
<tr>
<th>Strongly Agree (1)</th>
<th>Agree (2)</th>
<th>Neutral (3)</th>
<th>Disagree (4)</th>
<th>Strongly Disagree (5)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Comments:

8. There are different roles that EHOs can play such as: EDUCATOR, that is, deliver formal (EHOA) Hygiene Education training (as opposed to advice) to food workers. ENFORCER, that is, ensure that food workers are trained in food hygiene commensurate with their activities. Please indicate what in your view is the role of the EHO.

<table>
<thead>
<tr>
<th>Enforcer only (1)</th>
<th>Mostly Enforcer (2)</th>
<th>Combined Enforcer &amp; Educator (3)</th>
<th>Mostly Educator (4)</th>
<th>Educator only (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments:

9. The hygiene education training courses provided by the Environmental Health Service are effective.

<table>
<thead>
<tr>
<th>Strongly Agree (1)</th>
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<th>Neutral (3)</th>
<th>Disagree (4)</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Comments:

10. From your perspective, does the recent relaxation in legislation, introduced by Regulation (EC) No 852/2004, which allows flexibility in aspects of HACCP, make it less effective as an official control in the following areas?

| The use of non numerical critical limits. | X |
| The monitoring of temperature gauges as opposed to temperature probing of foods. | X |
| Recording by exception (only recording when the critical limit is exceeded and corrective action taken). | X |
| The lack of mandatory requirement for formal HACCP training. | X |
Appendix B
Focus Group Schedule

Interview Schedule
Introduction
Purpose
Confidentiality
Audio-taping and note-taking

Distribution of the definitions of the typed terminology on inputs, outputs, outcomes.


1. What in your views are the objectives of the EH Service?
   a. Who determines the objectives and where do they come from?
   b. Whose objectives are they based on...HSE/FSAI/Legislation/ FSAI/Local needs?
2. What performance indicators are currently in use?
3. What are they based on?
   c. Where did they come from?
   d. Who devised them?
   e. Who are they for?
4. What do you think they measuring - inputs/outputs/outcomes?
5. What are the desired outcomes?
6. From your perspectives are the current performance indicators effective in measuring whether the objectives have been achieved?

The benefits and the challenges of using performance indicators.

7. What do you believe are the benefits of using performance indicators?
8. What are the challenges involved in implementing P.I.s other than those currently in use?
9. What are the barriers? Do you think it require a change in work practices/activities?

Awareness of any existing models that are relevant for the Environmental Health Services.

10. Are you aware of other models that could be used or are being used elsewhere?
11. Do you think that the EH Food Control Services could use those models as P.I.s?
12. Do you think that the frequency of inspections could be reduced if all food premises were HACCP compliant?
   f. Would HACCP compliance give the desired outcome of safe food?
13. What are your views of whether a transparency model could be useful as a P.I. (e.g. as in the ‘Smiley’ system in Denmark, the ‘Scores on Doors’ scheme (as in Belfast) where the results of the inspection are posted in the premises)?
   g. What outcome could we expect if we used a similar system?

Suitable performance indicators for the food control activities of the Environmental Health Services.

14. Can you suggest appropriate P.I.s that would achieve outcomes rather than outputs?
Appendix C

Interview Schedule

Introduction
Purpose
Confidentiality
Audio- taping and note- taking

Current performance indicators in the EH Service

1. What in your view are the objectives of the EH Service?
2. Who do you believe determines the objectives and where do they come from?
3. In your opinion whose objectives are they?
4. What are the performance indicators that are currently in use and what are they measuring?
5. Where did they come from?
6. Who devised them?
7. Who are they for?
8. What are they measuring - inputs/outputs/outcomes?
9. What are the desired outcomes?
10. Are the current the current performance indicators effective in measuring whether the objectives have been achieved?

Benefits and the challenges of using performance indicators.

11. What are the benefits of using performance indicators?
12. What are the challenges involved in implementing P.I.s other than those currently in use?
13. What are the barriers?
14. Do you think that it would require a change in work practices/activities?

Awareness of any existing models relevant to Environmental Health Services.

15. Are you aware of other models that could be used in Ireland?
16. In your view could the frequency of inspections be reduced if all food premises were HACCP compliant?
17. Do you think that HACCP compliance can ensure safe food?
18. What are your views of whether the requirement for transparency in the inspection process could be useful as in the ‘Smiley’ system in Denmark, the ‘Scores on Doors’ scheme (as in Belfast) where the results of the inspection are posted in the premises?
19. What outcome could we expect if we used a similar system?

Any suggestions for suitable performance.

20. Can you suggest appropriate P.I.s for the EH Food Control Services?
Appendix D

Refined template

1.1 Objectives of the EH Service

1.1.1 Primary objectives - safe food/ high standards of compliance with the legislation/ prevent foodborne illness/ comply with FSAI Contract

1.1.2 Who set objectives/?Stakeholders - HSE/ EH Service/FSAI/Department of Health/Various agencies

1.1.3 EH Service Plan/drafted in isolation of national plan/ based on PEHO priorities/ Lack of consultation

2.1 Current performance measurement in EH Service

2.1.1 Current situation

2.1.2 Based on numbers of inspection/outputs

2.1.3 Value of current indicator- usefulness/activity

2.1.4 Relevance of current indicator/disadvantages – not used in service planning/can lead to demotivation of staff/ Not link to service objectives

2.1.5 P. I. fails to measure other activities/only inspection numbers are important - not change of behaviour/Advice/food worker education not measured/

2.1.5 Current risk assessment is inadequate to determine frequency of inspection/COP

3.1 Suggestions to improve performance measurement

3.1.1 Risk assessment, frequency of inspection/ current COP1 not robust enough to differentiate between hospital and coffee shop/Need individual risk assessment

3.1.2 Evaluate/measure inspection results/compare scores to show percentage improvement and/or disimprovements

3.2 Food worker training/useful or not useful/not necessarily effective/who should do training - EH Service or industry trainers/Training may be a luxury/Resources/EHO best educators/Conflict of interest/Inspections take priority over training/In service contract but no targets/Role of EHO- enforcer or educator

3.3 Sampling- useful/can be indicator/not useful- lot of sampling

3.4 HACCP- should be useful/can be a measure very easily adapted from present format/ Does not work/Not useful for small FBOs/ Flexibility has created confusion/Some FBOs are good but others not capable/Cannot prevent food borne illness caused by human error

3.5 Food poisoning- Good indicator of public health but difficult to link/unsuitable for local use.

4.1 Awareness of other models

4.2 Disclosure- ‘Scores on Doors’ and internet publication/ - acceptable/not acceptable/useful for the public but not for EHOs/ EHO accountability/safer food/FBO attitude/good for some FBOs- increase standards/name and shame/ transparency/onus to disclose/barriers to disclosure
5.1 Benefits of performance indicators

5.2 Comparability year on year/between regions/ Measure/target/prioritise/trend spotting/Motivation for EHOs

6.1 Challenges to implementation of performance indicators

6.2 Acceptability to EHOs/ opposition to change/lack of consistency throughout the service - locally regionally and nationally/need uniform approach/EHOs may need training for EHOs and FBOs/EHO fear of blame
Appendix E
Focus group Letter

Name & Address

Dear Focus Group Member,

I am a Senior Environmental Health Officer working in Fingal Food Control. I am presently studying part-time for a MSc in Health Services Management in Trinity College Dublin. I am required to submit a thesis as part of the course. My chosen topic is The Development of Performance Indicators for the Food Safety Function of the Environmental Health Services.

In order to inform this research I would like to convene a focus group of Environmental Health Officers involved in food safety control in the Dublin area to get your views on the benefits and the challenges of using performance indicators and what would be considered appropriate and suitable for use in the food safety function of the Environmental Health Services.

To protect your identity every effort will be made to sufficiently anonymise data including your views expressed within the focus group. While your anonymised data group transcripts will be securely stored in the researcher’s office for 5 years, they will be labelled by a field-note code (and not by your name or profession). Under no circumstances will your interview data be shared with other members of your group.

I would be obliged if you would consent to participate in the study. Please sign the underneath agreement and return to me at the above address using the enclosed self-addressed envelope. Your cooperation is much appreciated.

Yours sincerely,

_________________________
Geraldine Feehan
Senior Environmental Health Officer
Appendix F

Letter to Interviewee

Name & Address

Dear Principal EHO,

I am a Senior Environmental Health Officer working in Fingal Food Control. I am presently studying part-time for a MSc in Health Services Management in Trinity College Dublin. I am required to submit a thesis as part of the course. My chosen topic is The Development of Performance Indicators for the Food Safety Function of the Environmental Health Services.

In order to inform this research I would like to interview Principal Environmental Health Officers involved in food safety control to get your views on the benefits and the challenges of using performance indicators and what would be considered appropriate and suitable for use in the food safety function of the Environmental Health Services.

To protect your identity every effort will be made to sufficiently anonymise data including your views expressed during the interview. While your anonymised data transcripts will be securely stored in the researcher’s office for 5 years, they will be labelled by a field-note code (and not by your name or profession). Under no circumstances will your interview data be shared with any one else.

I would be obliged if you would consent to participate in the study. Please sign the underneath agreement and return to me at the above address using the enclosed self-addressed envelope. Your cooperation is much appreciated.

Yours sincerely,

Geraldine Feehan
Senior Environmental Health Officer
Appendix G

CONSENT FORM

Title of Study: The development of Performance Indicators for the Food Safety Function of the Environmental Health Services.

Researcher: Geraldine Feehan

Description of study: The aim of this study is to determine what Performance Indicators would demonstrate that the food control activities of the Environmental Health Services are ensuring that food is safe, will not cause illness and is in compliance with the law.

Background: This study is a mixed methods sequential study, which will involves a combination of both qualitative and quantitative approaches. You are being invited to take part in the qualitative component of the study as a member of a focus group.

The exchanges and views expressed by you and other members of the focus group will be audio-taped and transcribed by the researcher. The researcher will qualitatively analyse your transcripts. You can request a copy of your transcript if you wish.

There is no material benefit for taking part in the study. However it is hoped that the results will lead to the development of performance indicators for the food control activities of the Environmental Health Services.

Declaration of participant
I have read and understand the participant information leaflet relating to this study. I have been given the opportunity to ask questions and I am satisfied with the answers the researcher has provided. I understand that participation is voluntary and that I can withdraw at any time. I understand that whether I consent to participate will not be shared with the members of the management team. I understand that the material gathered in this study will not be used in future unrelated studies without further specific permission being obtained.

I consent to the inclusion of my interview data in an amalgamated fashion in the write-up of this study. I freely and voluntarily consent to participate in this study.

Participant’s signature: Date:

Declaration of researcher
I have explained the purpose of this study, its methodology, and how the resulting data will be utilised. I have answered any questions that the participant has to the best of my ability. I also believe that the participant understands what his/her consenting to participate in this study means and that s/he is freely giving her/his consent.

Researcher’s signature: Date:
Appendix H

Letter to online participants

Dear EHO Colleague,

I am a Senior Environmental Health Officer working in Fingal Food Control. I am presently studying part-time for a MSc in Health Services Management in Trinity College Dublin. I am required to submit a thesis as part of the course. My chosen topic is to Develop Performance Indicators for the Food Safety Function of the Environmental Health Services.

I wish to carry out an anonymous online survey amongst all the Environmental Health Officers working in food control in the Health Services Executive Dublin and North East. The information provided from the questionnaires will be used to inform my study.

The questions are regarding the benefits and the challenges of using performance indicators that would be considered appropriate and suitable for use in the food safety function of the Environmental Health Services.

The survey is completely anonymous. It can be completed at your desk and should take no longer than 5 to 10 minutes to complete. Please use the attached link to access the questionnaire on the Survey Monkey website.

I would be obliged if you would participate in the online survey.

Yours sincerely,

Geraldine Feehan
Senior Environmental Health Officer
Appendix I

Participant Information Leaflet for Focus Group

Title of Study: The Development of Performance Indicators for the Food Safety Function of the Environmental Health Services.

Researcher: Geraldine Feehan

Description of study:

The aim of this study is to determine what Performance Indicators would demonstrate that the food control activities of the Environmental Health Services are ensuring that food is safe, will not cause illness and is in compliance with the law.

Background:

This study is a mixed methods sequential study, which will involve a combination of both qualitative and quantitative approaches. The qualitative part is Phase 1 of the study and the quantitative part is Phase 2.

Methodology:

The qualitative part of the study involves convening a Focus group to explore their views and experiences regarding the benefits and the challenges of using performance indicators what would be considered appropriate and suitable for use in the food safety function of the Environmental Health Services.

The quantitative part involves an anonymous short survey questionnaire to all the Environmental Health Officers (including Principal and Senior Environmental Health Officers) working in food control activities in the HSE North East. The questionnaire will be developed when the qualitative part of the study is complete.

You are being invited to participate in the qualitative part of the study. You are being asked to participate Focus group to explore your views on performance indicators in the food control activities of the Environmental Health Services.

The focus group will be convened at a Dublin location convenient to you at a time suitable for you, and will last, approximately 60 to 90 minutes. Your views will be audio-taped and transcribed by the researcher. Your transcripts will then be qualitatively analysed, and you can request a copy of your transcript if you wish.

Confidentiality

To protect your identity every effort will be made to sufficiently anonymise data including your views expressed within the focus group. While your anonymised data group transcripts will be securely stored in the researcher’s office for 5 years, they will be labelled by a field-note code (and not by your name or profession). Under no circumstances will your focus group data be shared with other members of your group.

The results may be published in relevant peer reviewed journals and made available to policy makers at home and abroad if appropriate but no individuals will be identifiable in the publicly available results.
There is no material benefit for taking part in this study. However it is hoped that the results will be useful in the development of performance indicators for the food safety function of the Environmental Health Services.

Ethical approval for this study has been granted by the Faculty of Health Studies, Trinity College Dublin, and by your areas’ local ethics committee.

Please do not hesitate to contact me if you require further information, or would like to discuss this study further.

Thank you for your time,

Geraldine Feehan
Senior Environmental Officer,
Appendix J

Participant Information Leaflet (Questionnaire Respondents)

Title of Study: The Development of Performance Indicators for the Food Safety Function of the Environmental Health Services.

Researcher: Geraldine Feehan

Description of study:

The aim of this study is to determine what are the Performance Indicators that would demonstrate that the food control activities of the Environmental Health Services are ensuring that food is safe, will not cause illness and is in compliance with the law.

Background:

This study is a mixed methods sequential study, which will involve a combination of both qualitative and quantitative approaches. The qualitative part is Phase 1 of the study and the quantitative part is Phase 2.

Procedures:

The online survey questionnaire is being sent to all Environmental Health Officers (including Principal and Senior Environmental Health Officers) presently working in food control activities in the HSE North East. The questionnaires are totally anonymous as there is no identification requirement on the form and cannot be linked to any individual. Only EHOs involved in food control activities are requested to respond. 

The potential benefit of the study is that performance indicators may be developed which will be useful for the food control activities of the Environmental Health Service. As a stakeholder you are invited to partake in this study as your input is valued and will help to inform any changes which may occur as a result of the study.

You are invited to partake in phase 2 of the study by completing the attached anonymous online survey questionnaire which will take approximately 5 to 10 minutes to complete whilst sitting at your desk. The questions are regarding performance indicators and performance standards in the food control activities of the Environmental Health Services.

Prior ethical approval

Ethical approval for this study has been granted by the Faculty of Health Studies, Trinity College Dublin, and by your areas’ local ethics committee.

Please do not hesitate to contact me if you require further information, or would like to discuss this study further.

Thank you for your time,

Senior Environmental Health Officer
Environmental Health Services
Dublin North - East
Fingal Food Control
Tel 01-809-8332
E mail:Geraldine.feehan@hse.ie
Appendix K

DEFINITIONS OF TERMINOLOGY

Performance Indicators: Something that can be easily measured that will indicate that the desired outcomes are being / have been achieved.

Inputs: The resources e.g. staff, computers, training etc. that are allocated to enable the work unit to achieve the desired outcomes.

Outputs: What the use of the inputs achieves i.e. the numbers of inspections, improvement notices, numbers of samples, etc.

Outcomes: The actual results on the ground. The desired outcomes for each unit will contribute to and support the strategic outcomes for the service.

Example: The number of patients treated and discharged from a mental hospital (output indicator) is not the same as the percentage of discharged patients who are capable of living independently (outcome indicators).

{Source:Cited in Hatry 1999, p15}

Similarly, the number of inspections carried out by the Environmental Health Service is an output indicator. The outcome required from the food safety activities of the Environmental Health Service is to eliminate the risk of food borne illnesses posed by food business operators.

Below are examples from WHO Environmental Health Services in Europe (2000):

All governmental services and programmes begin at a certain point in time, then they alter inputs and activities to create outputs and desired outcomes. Inputs are the resources, including the raw material, money, personnel, training and time, that are used to plan and carry out different activities. Process refers to the transformation of inputs into activities and outputs, which are the results of the planned activities. Outcome can be thought of as the change in the population as a result of the outputs. The food inspection service is a simple example of an environmental health service. Personnel and money (inputs) are budgeted for a certain number of inspections (activities) during a given period of time. As a result of these inspections, some establishments are fined or closed because of health code violations. These results are the outputs. The reduction in, or lack of, food poisoning episodes in the population are then said to be the outcome of the food inspection service.

Efficiency: This is a measure of how effectively resources are being used. It is a direct relationship between the results obtained from a service (inputs) and the amount of effort expended in terms of human, financial and other resources (inputs), health processes, technology and time. Efficiency demonstrates how well the outputs have been produced from the inputs. Are resources being used in the most economical way to achieve results?

Effectiveness: Effectiveness expresses the degree of attainment of the pre determined objectives and targets of a service. Effectiveness is assessed in order to improve the formulation of services, objectives and goals.
Appendix L

Response Summary

Page: Default Section

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<thead>
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<th>Activity</th>
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<th>Somewhat important</th>
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</table>

2.1. Please indicate the importance of the following activities carried out by the Environmental Health Service to achieve safe food.

2.2. The classification of food businesses, in accordance with COP1, can result in a similar risk categorisation for very diverse food business types (e.g., a coffee shop selling lasagne shares the same high risk category as a large hospital kitchen). Would individual risk assessment for every food business be a better way than COP1 to determine frequency of inspections?

<table>
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answered question 46

skipped question 1

89
3.3 The outcome of inspections measured against previous results, to give a percentage improvement/or disimprovement, is a useful way of assessing levels of compliance.

<table>
<thead>
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<th>Strongly Agree</th>
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answered question 47

4.4 From your perspective, should a disclosure system such as 'Scores on Doors' as in the UK, or 'Smileys' as in Denmark, whereby inspection results are displayed in the premises, be introduced as an official control in Ireland?

<table>
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<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
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answered question 47

5.5 From your perspective, is it appropriate to have disclosure on the internet of inspection results (including infringements and remedial action required) as an official control?

<table>
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<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please tick the relevant box with your answer.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.8% (6)</td>
<td>19.1% (9)</td>
<td>31.9% (15)</td>
<td>27.7% (13)</td>
<td>8.5% (4)</td>
<td>3.00</td>
<td>47</td>
</tr>
</tbody>
</table>

answered question 47

6.6 The following Environmental Health Service work practices would need to be addressed if disclosure systems such as 'Scores on Doors' as in UK, or Disclosure of Inspection reports on the internet were to be introduced as official controls in Ireland

<table>
<thead>
<tr>
<th>Uniformly in decision making criteria.</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>59.6% (28)</td>
<td>38.3% (18)</td>
<td>2.1% (1)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>1.43</td>
<td>47</td>
<td></td>
</tr>
</tbody>
</table>

A consistent approach amongst EHOs in grading/scoring food businesses.

<table>
<thead>
<tr>
<th>Consistency between</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>72.3% (34)</td>
<td>27.7% (13)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>1.28</td>
<td>47</td>
<td></td>
</tr>
</tbody>
</table>

Consistency between

<table>
<thead>
<tr>
<th>Consistency between</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>65.2% (30)</td>
<td>34.8% (16)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>1.35</td>
<td>46</td>
<td></td>
</tr>
</tbody>
</table>
6. The following Environmental Health Service work practices would need to be addressed if disclosure systems such as 'Scores on Doors' as in UK, or Disclosure of Inspection reports on the internet were to be introduced as official controls in Ireland:

| Environmental Health Offices in general throughout the country. | | | | | |
|---|---|---|---|---|
| A consistent approach to enforcement actions nationally. | 59.6% (28) | 36.2% (17) | 4.3% (2) | 0.0% (0) | 1.45 47 |

Answered question 47

7. From your perspective, if official controls included DISCLOSURE OF INSPECTION RESULTS (as in 'Scores on Doors' and/or Inspection Reports on the Internet), would it make EHOs adhere strictly to LEGAL REQUIREMENTS as opposed to RECOMMENDATIONS when requiring REMEDIAL ACTION by the food business operators?

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please tick the relevant box with your answer.</td>
<td>23.4% (11)</td>
<td>51.1% (24)</td>
<td>17.0% (8)</td>
<td>6.4% (3)</td>
<td>2.1% (1)</td>
<td>2.13 47</td>
<td></td>
</tr>
</tbody>
</table>

Answered question 47

8. There are different roles that EHOs can play such as: EDUCATOR, that is, deliver formal (EHOA) Hygiene Education training (as opposed to advice) to food workers. ENFORCER, that is, ensure that food workers are trained in food hygiene commensurate with their activities. Please indicate what in your view is the role of the EHO.

<table>
<thead>
<tr>
<th></th>
<th>Enforcer only</th>
<th>Mostly Enforcer</th>
<th>Combined Enforcer &amp; Educator</th>
<th>Mostly Educator</th>
<th>Educator only</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please tick the relevant box with your answer.</td>
<td>0.0% (0)</td>
<td>27.7% (13)</td>
<td>63.8% (30)</td>
<td>8.5% (4)</td>
<td>0.0% (0)</td>
<td>2.81 47</td>
<td></td>
</tr>
</tbody>
</table>

Answered question 47

9. The hygiene education training courses provided by the Environmental Health Service are effective.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please tick the relevant box with your answer.</td>
<td>23.4% (11)</td>
<td>59.6% (28)</td>
<td>14.9% (7)</td>
<td>2.1% (1)</td>
<td>0.0% (0)</td>
<td>1.96 47</td>
<td></td>
</tr>
</tbody>
</table>

Answered question 47

Skipped question 0
From your perspective, does the recent relaxation in legislation, introduced by Regulation (EC) No 852/2004, which allows flexibility in aspects of HACCP, make it less effective as an official control in the following areas?

<table>
<thead>
<tr>
<th>Area</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>The use of non numerical critical limits.</td>
<td>12.8% (6)</td>
<td>46.8% (22)</td>
<td>23.4% (11)</td>
<td>14.9% (7)</td>
<td>2.1% (1)</td>
<td>2.47</td>
<td>47</td>
</tr>
<tr>
<td>The monitoring of temperature guages as opposed to temperature probing of foods.</td>
<td>34.0% (16)</td>
<td>46.9% (23)</td>
<td>6.4% (3)</td>
<td>8.5% (4)</td>
<td>2.1% (1)</td>
<td>1.96</td>
<td>47</td>
</tr>
<tr>
<td>Recording by exception only recording when the critical limit is exceeded and corrective action taken.</td>
<td>25.5% (12)</td>
<td>46.8% (22)</td>
<td>12.8% (6)</td>
<td>12.8% (6)</td>
<td>2.1% (1)</td>
<td>2.19</td>
<td>47</td>
</tr>
<tr>
<td>The lack of mandatory requirement for formal HACCP training.</td>
<td>19.6% (9)</td>
<td>52.2% (24)</td>
<td>15.2% (7)</td>
<td>10.9% (5)</td>
<td>2.2% (1)</td>
<td>2.24</td>
<td>46</td>
</tr>
</tbody>
</table>

answer question: 47

skipped question: 0