

FOOD SAFETY POLICY

2024-25

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Signed: Chair of Governors Print Name: Dawn Laverick-Brown

Date reviewed: July 2024 Next review due: July 2025

Food Safety Management System, School catering

This document sets out the standards for Food Safety within Batchwood School Controlled Establishments.

Batchwood School Food Safety Statement

Batchwood School recognises and accepts its responsibility for providing a safe and healthy environment for its employees and other persons using its facilities and services. This statement is an expression of the school's commitment to food safety and this policy formalises the arrangements for delivering the school meal services at Batchwood School.

The policy sets out the aims and objectives of the school catering and outlines responsibilities for managing food safety risks. It should be read in conjunction with School Health and Safety Policy and Environmental Health Policy statements.

A copy of the statement will be made available to employees. It will be reviewed, added to and modified as appropriate to sustain its effectiveness, and such changes will be brought to the notice of employees. It may be supplemented in appropriate cases by further statements relating to the work of particular departments or groups of workers.

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Signed - Headteacher Print Name: Ross Whitaker

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FOOD SAFETY AND HYGIENE POLICY

Policy Statement:

"It is the responsibility of the Senior Management/Headteacher of Batchwood School to ensure that the food and drink provided across Batchwood School is both safe and wholesome."

Batchwood School seeks to pursue this through a number of key objectives which include:

- Identifying and evaluating food safety risks using HACCP principles
- Minimising food safety hazards and effectively controlling the risks
- Complying with all relevant legislation and establishing standards of best practice
- Setting standards, monitoring and auditing compliance with the standards and where appropriate measuring improvement and appraising performance
- Ensuring that responsibilities and accountabilities are clearly defined and effectively communicated to relevant staff
- Taking effective action when there is non-compliance.

Batchwood School shall take all reasonable precautions and exercise all due diligence to ensure that all catering and retail activities comply with all relevant Food Safety legislation and in particular the provisions of the Food Safety and Hygiene (England) Regulations 2013 (<u>https://www.legislation.gov.uk/uksi/2013/2996/contents</u>) and Article 1 of Regulation (EC) No 852/2004 (<u>https://www.legislation.gov.uk/eur/2004/852#:~:text=1.,EC)%20No%20853%2F2004</u>).

The duty to take reasonable precautions and exercise due diligence is delegated throughout the management structure and to all levels of staff. The Headteacher and Governors will support both catering management and staff with a range of measures designed to assist with this duty. These measures will include the provision of adequate training at all levels, the maintenance of an effective monitoring system and the availability of adequate resources.

Batchwood School will strive to achieve the following objectives in relation to food safety and hygiene by:

- Safe food handling, cooking and storage practice will be observed.
- Satisfactory food hygiene standards will be maintained.
- The physical condition of the premises for all schools will, in conjunction with the schools and Hertfordshire Property Services, be at or above the minimum hardware standards as outlined in this manual.
- It will be possible to demonstrate at all premises that due diligence is being observed in relation to food safety and hygiene issues.
- Identify and evaluate food safety risks using HACCP principles and implement the necessary controls.

SECTION A

1. Organisation and Responsibilities

To ensure that legal compliance is achieved at all premises, responsibilities must be documented as part of Batchwood School management structure. The organisational structure for the management of food hygiene within Batchwood school will be the same as for other operational functions.

The general responsibilities for food safety and hygiene are outlined below. The following sections detail the specific duties for line management and the relevant support staff.

2. General Responsibilities

All levels of management within the organisation must ensure that, within any limits imposed by their position, due regard is given to the Policy in order to achieve the stated objectives. Each level of management must also have due regard to the effectiveness of a subordinate's measures to control food safety and hygiene standards.

3. Specific Responsibilities and Duties

Headteacher and Governing Body

- To ensure that sufficient resources are allocated to allow the achievement of the policy objectives.
- To monitor the effectiveness of management with reference to the duties and responsibilities detailed in this policy.

HR Manager

- To monitor the performance of the Catering Team with reference to their responsibilities and duties, and to take the necessary action to secure compliance with the objectives.
- To monitor standards within Batchwood School to ensure that satisfactory standards are maintained to ensure compliance with the objectives.
- To ensure that a satisfactory level of training has been provided to staff.
- To ensure that management and staff are released for all necessary training.

Site Manager

- To provide guidance and assistance in food safety and hygiene to line management.
- To review the contents of the Food Safety and Hygiene Operating Manual and assist the senior management team with the periodic review of the policy.

School Chef

- To ensure compliance with the measures detailed in the Food Safety and Hygiene Operating Manual.
- Identification food safety hazards and hygiene defects as well as the identification of general health and safety hazards.
- To take appropriate action to remedy any faults which have been identified and to check that the work has been carried out.
- To respond immediately to serious accidents and incidents.
- To ensure that all staff have the necessary training to comply with food and health and safety legislation.

Kitchen Staff

- To ensure compliance with the arrangements detailed in the Food Safety and Hygiene Manual.
- To report any structural or equipment defects to the relevant person –Site Manager/School Business Manager
- To ensure that high standards of personal hygiene and safety are maintained.
- To ensure food is protected from contamination, report any signs of pests, report any food poisoning occurrences and cover any cuts or wounds with blue plasters.

Head Teachers/Governing Body

• To ensure that the structure of premises is in a good state of repair to achieve full compliance with relevant legislation. Head teachers are responsible for funding the majority of kitchen constructional disrepair. A capital funding bid from County has been awarded for a new ventilation system which was installed April 2019.

HACCP Team (HR Manager, Site Manager & School Chef)

- To ensure the food safety manual reflects good practice and takes into account all those risks that are critical to safety.
- To be responsible for keeping the food safety manual up to date and for carrying out reviews where there are changes to the operation.

Health and Safety (Policy, Performance and Environmental Health)

- To provide advice and guidance to managers and staff on the health and safety/food safety hazards and risks associated with catering operations
- Environmental Health conducted an unannounced full inspection on 9 November 2022 which resulted in a Food Hygiene rating of 5.

SECTION B

The Food Safety Management System

1. <u>Description of Operation/Scope/Intended Use</u>

This policy/guidance relates to 'food business' operations under the direct control of Batchwood School and is mainly concerned with the preparation and service of school meals during the lunchtime period and break times. There will be occasions when meals are prepared for teaching staff functions, school events (which are attended by members of the public).

Young children in schools are considered to be a vulnerable group in terms of their susceptibility to infection and therefore there is a higher duty of care with respect to those responsible for preparing food (certain children of all ages may also have chronic illness/suppressed immune systems and therefore do not have the necessary resistance to fight infection. In addition, children may be vulnerable to allergic reactions etc.).

2. Legislation and HACCP

Regulation (EC) No 178/2002 (https://www.legislation.gov.uk/eur/2002/178/contents) covers the general principles of food law and Batchwood School acknowledges its responsibilities as a 'Food Business Operator'. All food businesses are required to comply with the Food Safety and Hygiene (England) Regulations 2013 and Article 1 of Regulation (EC) No 852/2004 outlines the general hygiene requirements applicable to Batchwood School. EC 852/2004 also specifies that a food safety management system should be implemented and that this must be based on HACCP (Hazard Analysis and Critical Control Point). Batchwood School has based its system of control on HACCP using the principles set out below:

- Identifying hazards;
- Identifying critical control points (CCPs) at steps where control is essential to prevent or eliminate a hazard or reduce it to acceptable levels;
- Establishing critical limits at CCPs which separate acceptability from unacceptability;
- Implementing effective monitoring procedures at CCPs;
- Establishing corrective actions when a CCP is out of control;
- Establishing verification procedures;
- Ensuring the system is documented and records kept up to date.

The HACCP team has identified the most important food safety hazards associated with Batchwood School operations. These are detailed in the Food Safety Manual along with the necessary controls to prevent the risks occurring.

3. Verification and validation

The HACCP plan has been validated by the HACCP senior management in Batchwood School. The validation has involved the evaluation of technical and observational information to determine whether the control measures are capable, if implemented, of controlling the hazard to the appropriate level and that this level of control can be achieved consistently.

The HACCP team will meet bi-annually to review the HACCP plan and validate that the control systems outlined in the plan are still effective in controlling food safety risks. HACCP team: School Business Manager, Health & Safety Manager, School Cook.

Internal audits are carried out as part of the internal QA system performance assessment. Bi-annual QA audits will be undertaken by Governing Body. Following the audit an action plan will be drawn up which prioritises any remedial action that needs to be undertaken.

On a half-termly basis the Site Manager/HR Manager has the responsibility to make sure that temperature records have been checked and signed off by the kitchen supervisors.

County Health and Safety Officers carry out Health and Safety audits in schools which include catering areas. Although these inspections are primarily concerned with Health and safety, Officers will highlight obvious food safety concerns and notify School Head, Batchwood School and the County Environmental Health Manager.

4. HACCP: The Process

HACCP is a food safety management system designed to control hazards at points critical to food safety and it involves systematically looking at each process step from intake, storage handling, processing, distribution and service to determine any potential risks and identifying the necessary controls. The HACCP process is based on:

- Identifying risks (what can go wrong, when and where).
- Controls that can be applied to control the risks (what can be done about it).
- Controls implemented and everyone clear on what to do if something does go wrong i.e. the corrective action necessary.
- Procedures working, documented, up to date and reviewed on a regular basis.

The HACCP team has considered the hazards, risks and resulting controls - the HACCP Plan outlines the controls and monitoring procedures.

The 'process flow chart' outlines the main process steps and this should be cross- referenced with the 'summary of process controls'. The details of the hazards and controls are given in the main body of the HACCP Plan.

The HACCP process involves looking at the hazards at each stage and using the process flow diagram. The *critical control points* (CCPs) are shown on the *'process flow chart'* and those relevant to an establishment are highlighted on the corresponding process control chart. Not all steps are critical and in the case of foods cooked on site the steps prior to cooking are *control points* (CPs). Control measures need to be applied here but they are not critical to safety, whilst the steps from the cooking process onwards are critical as there are no further processing controls

which will assure control of the hazard. A CP will limit a hazard but cannot assure control of it or be relied on to bring the hazard down to an acceptable level. Implementation of controls at a CCP is crucial to bringing a hazard under control.

School meals are generally prepared for immediate consumption and there are no 'cook-chill' operations currently being undertaken at Batchwood School. The main stages are:

preparation, cooking and immediate service and this applies to 95% of the school meals service. However, HACCP requires analysis of any exceptions, and it has been identified that there may be occasions where food is chilled down and/or held over to the following day. Also there may be situations where food needs to be transported, for example where a school kitchen is unable to prepare food on site for any reason and meals have to be transported from a neighbouring school. The HACCP plan takes into account these exemptions and schools operating in this way are required to consider these additional hazards. A generic process control chart is provided in Appendix 1 and this template outlines all the process steps and critical controls necessary to control the hazards identified. Each site should consider the most important critical controls applicable to their operations and ensure they are being implemented at all times.

It is tempting to identify the majority of steps as CCPs, as controls at these steps may be of benefit to the product in terms of safety or quality. It is important however, to determine which steps are truly critical so that resources can be targeted effectively at these locations. There will be a number of steps where preventative procedures will help control numbers of pathogens but there are some which are essential, for example: - where a loss of control would result in an unacceptable food safety risk.

When considering CCPs it is important to give each step careful consideration with special regard to the position in the sequence of the operation.

There are four questions which need to be asked to determine whether or not each step is a Critical Control Point. These are as follows:

- a. Is there a hazard at this process step?
- b. Do preventative measures exist for the identified hazard?
- c. Would loss of control at this step give rise to an unacceptable Food Safety Hazard?
- d. Will a subsequent step or action eliminate or reduce the hazard to an acceptable level?

The full HACCP Decision Tree is shown on page 9

The HACCP system is built on a foundation of standard operating procedures (HACCP Prerequisites) which are designed to control hazards in a general way.

5. HACCP Prerequisites Programmes (PRP's)

HACCP Prerequisites programmes (PRP's) are the general measures taken to ensure that the operation is being run in accordance with good hygiene/safety principles and these need to be in place before HACCP can be considered. Effective supervision, instruction and competency training, cleanliness of equipment/premises are all prerequisites to the implementation of HACCP but may not necessarily be referred to in the HACCP process flows and HACCP process charts.

PRP's provide a sound foundation for HACCP and allow the HACCP plan to be process specific and focused on essential measures necessary at each stage of the process. It is essential that these universal steps and procedures are in place and routinely monitored, as these underpin the HACCP process to the extent that if these are ignored the critical steps identified in the HACCP plan will fail. The Prerequisites Programmes (PRP's) for Batchwood School controlled establishments are outlined on page 26 and include:

- Supplier assurance
- Requirements for equipment and raw materials
- Menu specifications
- Food hygiene training
- Washing/WC facilities
- Structural requirements
- Cleaning & disinfection
- Water quality
- Staff health
- Personal hygiene
- Pest control procedures
- Food waste procedures
- Floors/walls/ceilings specifications
- Equipment specifications
- Planned maintenance
- General temperature requirements
- Labelling, traceability and recall procedures



Hazards

The Main Hazards Associated with food are physical, chemical and biological contamination which can result in food poisoning, allergic reaction, physical injury and chronic disease. Examples are given below:

CHEMICAL CONTAMINATION

- Cleaning fluids
- Dyes
- Insecticides/rodenticides
- Intrinsic chemicals, i.e. arsenic, lead etc.
- · Ingredients/additives



BIOLOGICAL CONTAMINATION

- Bacteria
- Viruses
- Mould
- Protozoa

PHYSICAL CONTAMINATION

- Dirt
- Stones
- Glass
- Plastics/metal
- · Oil/paper/cardboard/wood
- Hair
- · Insect/animal debris
- · Equipment debris
- Stationery

Fig 2

The flow chart below outlines the main process steps from receipt of goods to handling and processing through to service.

An explanation of each stage is given and this is summarised in the process control charts that follow.

PROCESS FLOW CHART



CCP1-RECEIPT OF GOODS/ SUPPLIER ASSURANCE

Hazards

Microbiological contamination, growth and toxin formation Physical/chemical contamination

Multiplication of food poisoning micro-organisms in high risk foods Frozen food thawed or partly thawed which may cause multiplication of micro organisms Microbiological, Chemical or Physical Contamination of product could occur if packaging damaged or faulty or if there is evidence of pest infestation.

Cans dented, bulging, rusty or leaking causing chemical contamination or multiplication of micro-organisms Presence of mould or other forms of spoilage.

Controls

- Temperatures to be kept below 5°C for high risk perishable foods and between -15 and -18°C for frozen food.
- Visual inspection to ensure products not damaged and packaging intact.
- No evidence of insects/pests.
- Delivery notes/documentation in order.
- Check expired date mark and food past its use by or best before date.
- Follow general PRPs

Corrective action

High risk perishable food should be delivered at 5 °C or below. Between 5 °C-8 °C Cook/Catering Manager to assess suitability for use. Above 8 °C discard product if ready to eat high risk food (this should not be used for human consumption) Record nonc ompliance in site diary.

Damaged packaging - return to supplier or dispose of product.

Monitoring

Rejection – Report to supplier, log in site diary and complete

supplier comment form. goods clearly labelled 'unfit for human consumption' stored in dedicated area awaiting collection/return/disposal.

Temperature records kept with manual and retained for four months.

Standard Operating Procedures (SOPs)

- Food delivered at predetermined time agreed in the contract specification unless there is a local agreement.
- Chilled foods are to be delivered at 5°C or below. Between 5 °C and 8 °C Catering manager to assess suitability for use. Above 8 °C discard product if ready to eat high risk food (this should not be used for human consumption). Record noncompliance.
- Random checks carried out (temperature probe inserted between pack) for ready to eat chilled foods. One high risk item i.e. ham, checked during delivery. Records of temperatures to be kept in site diary in the office.
- Frozen foods at between -15 and -18°C. Random checks carried out (temperature probe inserted between packs).
- Food once inspected should be immediately placed in refrigerated storage/freezers (within 15 minutes of delivery).

CCP2-CHILLED FOOD STORAGE

Hazards

Microbiological contamination & growth, spore germination and toxin formation. Physical/chemical contamination

Multiplication of food poisoning micro-organisms in high risk perishable foods. Physical, chemical and microbiological contamination of product. Cross-contamination of high risk foods with food poisoning micro-organisms from raw foods. Deterioration of product quality

Controls

High risk perishable foods should be stored at 5°C or below (Fridges should operate between 1-4°C) Representative temperatures taken from the warmest area of the fridge.

Perishable foods that are high risk labelled up with 'use by' date.

Bought in products with use by/best before dates, labelled and stored in refrigerator.

Effective stock rotation.

Foods adequately covered and prevented from risk of contamination.

Corrective action

Above 5 °C at beginning or end of shift discard product (this **should not** be used for human consumption).

Above 5 °C during shift inform the cook/catering manager and decide whether food can be used.

(Manager to check temps after 30 mins – if above 8°C should be discarded. Below 8°C- take out of use defective units transferring stock to operational units.

(all actions should be recorded in the site diary)

Monitoring

Daily checks of food temperatures once at the beginning of the shift in the morning day and at the end of the shift in the afternoon. Temperatures should be recorded and diary sheets signed off by supervisor. Method of taking temperatures (ascertain warmest part of fridge)

- In-between pack using a sanitised hand held temperature probe.
- Probe food to check core temperature (using a sanitised hand held temperature probe)

Hand held thermometers should be calibrated monthly.

Date labels should be checked on a daily basis to ensure that the two day rule has not been exceeded. Food outside the two day period should be disposed of immediately.

Standard Operating Procedures (SOPs)

High risk 'ready to eat' foods and 'ready to eat' meals i.e. processed meat, processed fish pasteurised dairy products should be stored at 5°C or below to prevent growth of food poisoning organisms.

Temperatures should be taken twice a day:

- At the beginning of the shift in the morning
- After service and prior to leaving the kitchen.

If between pack temperatures are found to be above 5 °C the following action should be taken:

Food temperatures should be taken using a sanitised hand held probe. If high risk food is found to be above 5°C at the beginning of the morning shift the food should be discarded immediately.

If temperatures are found between 5° C - 8° C at any time during the day the cook/catering manager should take a decision whether the food is safe to use taking into account the nature of the food, the duration of temperature fluctuation and any further processing stage. High risk food that has been at 8 °C or below for a couple of hours is unlikely to present a risk. Further heat processing will reduce any risks even further. Any food found to be above 8 °C should be discarded immediately.

Immediate action should be taken to repair faulty equipment and if necessary food should be transferred to an alternative refrigerator which is capable of maintaining food below 5 °C.

Meats delivered at chilled temperatures <u>must not</u> be frozen as they have a 'use by date'. Keep foods covered.

N.B. Problems with refrigeration: Record in site diary (kept in school meal kitchen) and inform the Site Manager/School Business Manager for advice if there is a problem. For refrigerator/freezer breakdown, call out engineer and advise the Site Manager. Ensure temperatures are taken at regular intervals.

CHILLED FOOD STORAGE (Continued)

Standard Operating Procedures (SOPs) cold storage cont..

There should be effective segregation from sources of contamination. Foods containing meat fish poultry dairy products are most at risk particularly if they are ready to eat i.e. will not be subject to further heat processing. *Microbiological contamination from raw meat, poultry and fish may contaminate ready-to-eat/cooked foods.*

To prevent cross-contamination:

- Keep high risk foods and ready-to-eat foods apart from raw foods at all times. Storage of raw and cooked or ready to eat foods should be in designated, separate areas in the fridge.
- Fresh meat: where there is no separate meat refrigerator, store cooked meat above raw, with raw meat at the lowest level of the refrigerator. Store raw meats in deep dishes to prevent spillages. Keep covered. Use defrosted meat within 24 hours.
- All kitchen-produced food to be kept covered and labelled with a food label indicating a 48 hour use by date starting on the day
 of production.
- High risk foods i.e. Cooked meat (e.g. ham) must be stored in a lidded container labelled with date of opening and used within 48 hours once opened. Cooked meats delivered at chilled temperatures <u>must not</u> be frozen as they have a 'use by date'.
- Keep foods covered
- Always store food on shelves and never on the base of units.
- N.B. Problems with refrigeration: Record in site diary (kept in all school meal kitchens) and inform the Site Manager/School Business Manager if there is a problem. Call out engineer. Ensure temperatures are taken at regular intervals. If under warranty inform Headteacher.

Once chilled food has been delivered to catering unit, it should to be transferred to operational refrigerators within 15 minutes or sooner.

Never overload refrigerators as this will restrict the circulation of cool air.

Keep glass bowls, glasses, and other glass containers out of the refrigerators.

Daily checks of the food in all chilled storage units to be undertaken removing out of date items.

All refrigerators to be kept clean by removing food spillages immediately, sanitising food contact surfaces daily and undertaking a more thorough clean weekly. Record cleaning activities in Cleaning Schedule

CCP3-DRIED GOODS STORAGE

Hazards

Microbiological contamination & growth, spore germination and toxin formation. Physical/chemical contamination

Whilst most of the microbiological hazards associated with dry food relate to spoilage (moulds and general quality issues) there are risks associated with certain dried products that become moist or damp e.g. dried milk powder will support the growth of bacteria if the moisture content increases for any reason.

Physical contamination by rodents, insects and birds.

Chemical contamination i.e. cleaning chemicals, taints.

Controls

Dry stores maintained in a good state of repair, clean, dry, well ventilated. Store temperature should be between 10°C -15°C.

Stores cleaned on a regular basis (see kitchen cleaning schedule) 'First in First out' stock rotation system operated and stock levels controlled. All dry goods stored off the floor and in clean, dated, covered containers where appropriate.

All contents of opened packets and packaging transferred to clean containers with close fitting lids. Stores should be rodent and bird proof.

Corrective action

Catering manager informed of any evidence of insects/rodent activity and immediate action taken to remove or protect food from sources of contamination.

Any condensation/dampness in stores to be reported to the catering manager. Goods that are damaged or have defective packaging should be rejected and manager informed.

Monitoring

Dry stores maintained in a good state of repair, clean, dry, well ventilated.

Store temperature should be between 10°C -15°C. Stores cleaned on a regular basis (see kitchen

cleaning schedule)

'First in First out' stock rotation system operated and stock levels controlled.

All dry goods stored off the floor and in clean, dated, covered containers where appropriate.

All contents of opened packets and packaging transferred to clean containers with close fitting lids. Stores should be rodent and bird proof.

Standard Operating Procedures (SOPs)

- Stores should be rodent and bird proof: doors should be provided with metal kick plates and airbricks, if present, fitted with wire gauze. Holes around pipes passing through walls should be effectively sealed.
- Stores checked on a daily basis for evidence of pests/insects.
- Goods that are damaged or have defective packaging should be rejected.
- Immediate action should be taken to prevent condensation in stores.
- 'Use before' dates checked.
- General check of storage conditions.
- Chemicals should not be stored in dry goods stores. In exceptional circumstances they may be stored in dry stores if kept in a designated area separate from food.
- Defective structure/poor maintenance reported to the Site Manager.

CCP4-FROZEN STORAGE

Hazard

Microbiological contamination & growth, spore germination and toxin formation. Physical/chemical contamination

Multiplication of food poisoning micro-organisms in high risk foods (if product has thawed). Physical, chemical and microbiological contamination of product.

Cross contamination of high risk foods with food poisoning micro-organisms from raw foods. Deterioration of product quality.



To prevent cross contamination - raw meat and fish must be stored below and separate from cooked food, ice cream etc.

Defrosted food items must not be refrozen especially ice cream.

All food shall be well wrapped and covered to prevent contamination

All pre-packaged purchased food from nominated suppliers to have their 'best before' dates clearly displayed to allow for correct stock rotation. Food cooked on site that is to be frozen should be labelled with production date, description, initials of producer and best before date of three months. Use approved food labels

All interior and external surfaces of the freezer must be kept clean.

Report freezer defects to your Catering Manager in particular where there are signs that food is defrosting.

Ensure frozen food is placed in freezer within 15 minutes of delivery

Always ensure freezers are regularly defrosted or those with auto defrost programmes fully functional to reduce the buildup of ice.

Freezers to be subject to regular servicing and maintenance with supportive records available.

In the event of freezer breakdown food may only be used provided safe defrosting takes place (See Defrosting)

After holidays a physical check must be undertaken of all units.

CCP4a - FREEZING

Hazard

Microbiological contamination & growth, spore germination and toxin formation. Physical/chemical contamination

Multiplication of food poisoning micro-organisms in high risk foods (if product has thawed). Physical, chemical and microbiological contamination of product.

Cross contamination of high risk foods with food poisoning micro-organisms from raw foods. Deterioration of product quality.

Controls

Frozen foods should be placed in Freezers operating between -15 and -18°C (temperatures checked once a day). Only specified foods to be frozen immediately upon receipt (tagged with the day of freezing and the date thawed) Foods adequately covered and prevented from risk of contamination. Stock rotation procedures in place.



If food found to be thawed in freezers inform catering manager immediately and decision taken whether to dispose of product or use immediately depending on the nature of the food, the length of time outside correct operating temperatures and further processing steps. (Any high risk RTE foods found thawed/above 0°C should be discarded immediately).

Any foods without date labels should be discarded.

Action recorded

Monitoring

Daily checks of frozen food to ensure food has not thawed/defrosted and that operating temperatures are within limits.

Date labels placed on foods.



Max weight 2.25 kg (5lbs) for meats

- Perishable high risk foods must be thawed in a fridge.
- Ensure that sufficient time is given for thawing (larger items may take 24 hours under refrigeration).
- Bakery products <u>can</u> be thawed at ambient, so long as they do not contain real or artificial cream, in which case they must be defrosted in the refrigerator.
- During defrosting, ensure that items are protected from contamination.
- If the recipe demands that raw meat needs to be defrosted it should be placed in a separate lidded container, sufficiently deep to contain thawing liquid.
- Once thawed, check that the center of meat is thoroughly defrosted.
- Once thawed, foods are to be kept refrigerated and used within 24 hours.
- Products being defrosted are labelled with the date they were removed from the freezer.
- Wash hands after handling raw or frozen foods.
- Never re-freeze thawed products.
- Defrosting in microwaves must be kept to a minimum and is restricted to items that are going to be cooked straight away.

There should be effective segregation from sources of contamination. Foods containing meat, fish, poultry and dairy products are most at risk particularly if they are ready to eat i.e. will not be subject to further heat processing. *Microbiological contamination from raw meat, poultry and fish may contaminate ready-to-eat/cooked foods*.

To prevent cross contamination:

- Cover all foods.
- Storage of raw and cooked or 'ready to eat' foods is in designated, separate areas.
- Fresh meat: where there is no separate meat refrigerator, store cooked meat above raw, with raw meat at the lowest level of the refrigerator. Store raw meats in deep dishes to prevent spillages. Keep covered. Use defrosted meat within 24 hours.

CCP6-PREPARATION/ ASSEMBLY

Hazards

Microbiological contamination, growth and toxin formation. Physical/chemical contamination

Microbiological, chemical and physical contamination of open food from people, equipment, preparation surfaces, machinery & from the general environment.

Cross contamination of micro-organisms from raw foods.

Multiplication of food poisoning micro-organisms in high risk foods due to temperature abuse during preparation. Contamination from cleaning chemicals

Controls

The maximum preparation time at room temperature should be 1 hour.

Separation of raw and high risk food.

Separation of utensils and equipment (colour coding where necessary).

Personal hygiene and illness exclusion dealt with by pre-requisite controls. (see PRPs).

Corrective action

Cook/Catering manager advised if 1 hour limit exceeded Hygiene practices monitored by supervisor and poor hygiene practice rectified.

Monitoring

Preparation times monitored to ensure the maximum time at ambient temperature is no longer than 1 hour.

Standard Operating Procedures (SOPs)

General

- Foods should be segregated from all potential sources of contamination.
- Regard should be given to continuous work flow patterns and segregation of processing areas.
- Equipment/utensils should be cleaned and washed after use.
- Staff should have regard to good personal hygiene and hygienic practices.
- Maximum preparation time should not exceed 1 hour after which food should be placed under refrigeration or cooked/served.
- Most vegetables and salads come in ready prepared but if not these should be washed and prepared hygienically.

(Keep the preparation of raw food physically separate from cooked high risk food to prevent cross contamination by having separate designated food handling areas and using exclusive equipment (boards, knives etc) preferably colour coded. Alternatively carry out these activities at different times but sanitising areas and equipment between uses.)

Detailed Instructions

- Prepare raw meat on a work surface separate from any other activity.
- A red board and red handled knives are used for raw meat preparation only. Carefully sanitise all work surfaces and utensils after
 use. Make up sanitising lotion on a daily basis and follow the instructions on dilution concentrations. After cleaning down do not use
 the dishcloth again for any other purpose, place in washing bucket containing sanitizing solution which again should be made up on
 a daily basis in accordance with standard operating instructions.
- All salad items are washed thoroughly. Clean the sink <u>before</u> and after use, using sanitizer.
- Hands must be washed <u>before</u> handling high-risk foods and always <u>after</u> handling raw meat and other potentially contaminated foodstuffs.
- During preparation high risk food should only kept for a <u>minimum</u> amount of time at ambient temperatures (no longer than 1 hour).
- After preparation return high risk foods, intended to be eaten cold, to the refrigerator or place immediately in the cold cabinet. All
 high-risk foods not intended for immediate service must be stored in the refrigerator. If they are not to be used that day, they must
 be dated and labelled and used within 24 hours.
- Cooking must commence immediately after preparation, or foods such as marinated meats should be stored in a plastic container under refrigeration until required (dated and labelled).
- Staff must minimise direct handling of ready-to-eat foods. Use sanitised tongs or a fork wherever possible.





- Ensure that high risk foods are not chilling at ambient temperature for more than 2 hours. As soon as the food has cooled sufficiently it should be refrigerated, date labelled and used within 24 hours.
- Keep foods covered
- As soon as foods have reached room temperature they should be placed in a fridge.



Temperatures checked after 30 minutes using a sanitised hand held temperature probe. Food to be kept covered and well protected during transport. Electric hot and/or cold food distribution trolleys (or suitably tested insulated food distribution boxes or refrigerated vehicles) to be used AT ALL times to transport and delivery high risk food kept above 68 °C or below 8°C.

There should be no unnecessary delays during the transportation stage.

All food delivery/transport equipment to be kept clean and maintained in sound and good physical condition.

CCP10a-HOT-HOLDING & DISPLAY



Microbiological contamination, growth and toxin formation. Physical/chemical contamination

Multiplication of food poisoning micro-organisms in high risk foods Microbiological, Chemical or Physical Contamination

Foods fully cooked to 75 °C immediately prior to hot holding.

Controls

In school kitchens the maximum holding/display period should aim to be no longer than half an hour. If for operational reasons longer periods are required, the following procedure must be observed:

- After one hour strict monitoring is required to ensure the food is held above 65°C.
- As long as the food is kept above 65 °C the food can be held for a maximum of two hours after which the food should be consumed immediately or disposed of

Restrict direct handling of food where possible. Staff serving food to ensure good personal hygiene and where possible gloves/tongs used



Standard Operating Procedures (SOPs)

- Check "high risk" food temperatures during service after 1 hour to ensure they are being maintained at 65° C minimum no hot food should be held more than 2 hours.
- A weekly check of hot cabinets should be taken and temperatures recorded.
- Where possible protect food from open contamination. Bain maries should be kept lidded.
- Provide clean tongs/serving utensils for any self serving units.
- Ensure the hot display cupboard is switched on in advance of the service session allowing time for it to heat up to the correct temperature i.e. this will usually take about 1 hour.
- Check the core temperatures of hot food before display, which must be at least 75°C and recorded.
- Always replenish with fresh food rather than topping up displays.
- Never reheat or use a hot display cabinet for heating food.

Clearly label all products containing nuts.

CCP10b-COLD-HOLDING & DISPLAY

Hazard

Microbiological contamination, growth and toxin formation. Physical/chemical contamination

Multiplication of food poisoning micro-organisms in high risk foods Microbiological, Chemical or Physical Contamination.



SECTION C

FOOD SAFETY -PREREQUISITES PROGRAMMES (PRP's)

1. Supplier Assurance

Accredited Suppliers only should be used.

Batchwood School's accredited supplier is Bidfest. The company was chosen as we previously used them when under Hertfordshire Catering.

Our alternative recognised outlets are: Sainsbury's

All suppliers must be able to demonstrate that they:

- Apply the principles of HACCP throughout the operation and comply with all relevant Food Safety and Hygiene and Health and Safety legislation.
- Hold a fully documented Integrated Management System covering the main aspects of sourcing, receipt, storage and distribution of food products.
- Ensure full compliance with the product specification
- Full traceability is required for all products from source to delivery.
- Comply with all the terms and conditions of the contract.
 Receipts must be forwarded to the HR Manager for processing and

recording

Key Points

- a) Foods must only be purchased from the Accredited Suppliers.
- b) Suppliers of high risk foods must supply a print-out of vehicle temperatures at the point of delivery. These should be kept on site attached to the food delivery record sheet for a period of 2 months.
- c) Suppliers chosen in the following way:

All procurement will be carried out in compliance with Batchwood School's Departmental Regulations and the Hertfordshire County Council's Contract Regulations. Procurement Departments carry out both food safety and health and safety checks into both the production and delivery of the goods

2. Food Hygiene Training

- All personnel trained to Level 1 as part of their induction training within the first 3 days of taking up employment.
- Cooks/catering managers, on completion of their probation period, will be trained to Level 2.
- All staff on grades H4-H6 will be trained to Level 3.
- Refresher training for Levels 1, 2 & 3 will take place every 3 years or where new legislation and change of circumstances dictate.
- Training records will be kept up to date. These will be monitored in accordance with the training plan.
- The senior management team will assess the competence of staff in accordance with the training plan and as part of the appraisal process.

3. Food Complaints & Food Poisoning

This guidance gives important information on the procedure for dealing with food complaints and allegations of food poisoning.

Important:

- No liability should be procured until the complaint has been fully investigated
- Record complaint information in as much detail as possible on the appropriate form. Inform the Site Manager/School Business Manager and Headteacher. They will in turn inform County for further guidance.

Alleged Food Complaints

Where a complaint is made the following action will be taken:

- If a foreign object is present, try to identify it and take photographs.
- Remove the meal and keep it isolated in a cool area away from other foods. Do not throw it away.
- Check food areas for other similar foreign bodies or contaminants.
- Try to obtain more information from those involved in the food preparation and service.

- Complete as much detail as possible on the Food Complaint Report.
- Inform the Site Manager/HR Manager so that they may carry out an investigation of the complaint, and decide if it is serious enough to report the matter to the Local Environmental Health Department.
- Hertfordshire County Council's Environmental Health Manager should also be advised if the incident is serious enough to have health implications for consumers or is likely to attract adverse publicity for the School in any way.

Alleged Food Poisoning

Where a complaint is that food consumed has caused the consumer to become ill, the following information should be obtained and recorded on the Alleged Food Poisoning

Report Form:

- Obtain a description of the meal consumed.
- Obtain time and date consumed.
- Obtain interval of time between the meal being consumed and the onset of illness, with details of other food and drink consumed in the interim period, and the previous day if possible.
- Obtain name, age, address of person who is ill, and whether they have seen a doctor or been admitted to hospital.
- If possible, advise that stool samples should be been taken as this will help to identify any pathogens present.
- Contact the local authority Environmental Health Department (contact numbers are on 'Connect').
- Contact the County Council's Environmental Health Manager
- Details of the illness, patient's previous state of health and present condition.
- Why it is believed the food caused the illness.

The following action must then be taken:

- Report the matter without delay, directly or by telephone to the Headteacher, Site Manager/HR Manager
- Send written confirmation as soon as possible using the Report Form to the Site Manager/School Business Manager
- Endeavour to identify and isolate from use, the batch of ingredients from which the offending meal was prepared. Retain any pre-prepared meals associated with the suspect food.

On receipt of the above details, the Site Manager/HR Manager will write to the complainant acknowledging that the matter is under investigation.

The investigation of the complaint will be undertaken by the Site Manager/HR Manager, seeking guidance from County H&S Managers and who may be assisted by the Environmental Health Manager. Any outbreak of food poisoning must be reported to the local Environmental Health Department.

4. Product Recall

If for any reason a product in use is considered unsafe it should be taken out of circulation immediately and the Area Manager informed. The problem may be an isolated local incident or in response to a Food Standards Agency '*Food Alert*'. It is the responsibility of the procurement department to initiate a recall of any similar products that may be in circulation. The Environmental Health Manager should be informed and if necessary the local Environmental Health Department will be made aware of the issue.

5. Personal Hygiene and safety

- Always wash your hands using soap provided when entering or re-entering the food production area, before and after handling food, after using the toilet, smoking or blowing your nose. Bacteria from hands when transferred to food can cause illness. Remember to dry your hands thoroughly afterwards.
 - NB: Batchwood School has a 'no smoking' policy. Staff must follow this policy.
- Avoid touching your nose or lips or scratching your head whilst handling food. Again, bacteria from hands when transferred to food can cause illness.
- Do not come to work, and immediately notify your line manager if you suspect you or a member of your family may be a carrier, or are suffering from any illness which may be transmitted through food, for example:
 - infected wounds
 - skin infections
 - sores
 - diarrhoea
 - vomiting
 - seek advice from your doctor and tell him/her you are a prime food handler.
- Your manager will advise you about when you can return to work (usually 48 hours after symptoms cease). There may be a requirement in some cases for a doctor's certificate to return to work following two clear stool samples in cases of suspected food poisoning or 48 hour rule with interview/questionnaire. All staff are required to complete with their line manager a 'self-certification, sickness absence and return to work meeting form'.
- Return to work forms must be filled out after return from holidays abroad.
- Avoid coughing or sneezing over food. Bacteria will be transmitted to food.
- Food handlers must wear a hat with a net and keep their hair neat and tidy, long hair must be tied back and enclosed in a net. It is essential to prevent hair/bacteria falling into food products

- Keep fingernails short and clean bacteria harbours beneath long fingernails. Nail varnish/gel or nail extensions must NOT be worn. Nails should not protrude over the top of fingers when hand held up, open and facing someone.
- Do not wear jewellery (except a plain wedding ring or band). Jewellery harbours bacteria within the crevices and stones can fall into food products. All earrings will be prohibited. No facial piercing is allowed; any facial piercing should be removed before commencing work.
- Do not smoke whilst handling food it is against the law, as bacteria can be passed on through contact with lips, mouth and nose. Food, including sweets and chewing gum, must not be consumed while preparing food. Make sure that you wash your hands before returning to work after any break.
- Do not spit in food areas. Mucus harbours bacteria.
- Do not wear excess make up or strong perfumes as strong perfumes may taint food products.
- Keep all wounds covered with blue detectable waterproof dressings. Remember wounds and cuts, grazes and boils can become easily infected with germs. Uncovered cotton bandages are forbidden.
- It is important to remember before starting work, to wash your hands. Wet hands using hot running water, apply liquid soap and wash thoroughly, rinse and dry your hands using disposable paper towels.
- Remember to bath or shower daily to keep yourself clean and fresh.
- Remember to wash your hands after handling raw food products, after emptying refuse and any time when your hands may have become contaminated.
- It is important that all staff complete a medical form before they commence employment and immediately after returning from holidays abroad.
- All staff must wear the protective clothing provided. This must be kept clean, ironed and in good condition. These garments must not be used to travel to and from your place of work.
- No opened toed shoes should be worn and shoes should be tight fitting with slip resistant soles.
- No tights should be worn; short socks are permissible.

Probe Thermometers

- Probes and sanitising wipes are provided.
- Probes must be kept clean, and the probe must be sanitised each time it is used. Batteries must be changed immediately, if necessary, spares should be kept on site.

• Probe checks carried out on the first Monday of each month by the Catering Manager as follows and recorded in the temperature log:

Cold: agitate the probe in a mixture of melting ice in water until a constant reading is obtained. It should be between -1°C and +1°C.

Hot: agitate the probe in boiling unsalted water until a constant reading is obtained: it should be between 99°C and 101°C.

- If it is outside the range, check the probe using another probe if you have one.
- Arrange for replacement or repair or re-calibration as necessary with your Area Manager.
- Follow the probing procedures.

SECTION C

FOOD PREMISES. EQUIPMENT & SERVICES PREREQUISITES

The design and layout of premises and equipment should permit good food hygiene practice including protection against contamination between and during operations. In particular:

Floors

Floor surfaces should be durable, non-absorbent, anti-slip, without crevices and capable of being effectively cleaned. The angle between the wall and floor junctions should be coved to prevent build-up of debris and to allow effective cleaning.

Common defects in floors include broken/pitted quarry tiles and detachment of jointing material between tiles. Welded vinyl sheeting may become detached or damaged which will prevent effective cleaning.

Walls

All wall coverings should be smooth, impervious, non-flaking, light coloured and generally must be capable of being effectively cleaned and if necessary disinfected. Surfaces should be dry and free of mould growth (some paints incorporate a fungicidal additive).

It is best practice to have more durable impact resistant surfaces around work areas, cookers, sinks and basins which are likely to become soiled, damaged or affected by heat or chemicals. Sheet steel is one of the best materials, although, resin bonded fiberglass, Perspex, and ceramic tiles can also be used depending on the type of activities being carried out.

Pipes passing through walls must be effectively sealed to prevent the ingress of pests and where possible there should be sufficient gaps behind pipework to allow effective cleaning.

Shutters to servery hatches should fit tightly, move easily up and down, be capable of being effectively cleaned and meet appropriate fire safety standards.

Ceilings

Ceilings should be smooth, fire resistant, light-coloured and easy to clean. Some schools may have a plasterboard/ skimmed plaster finish painted with emulsion paint. This is acceptable as long as there are no condensation problems. Many schools have suspended ceilings with a framework of removable panels. Panels should be tight fitting and capable of being effectively cleaned.

Cleaning and sanitation

The cleaning schedules should include method statements/cleaning frequencies and cover the following:

- Fixtures and equipment with cleaning procedures
- Cleaning materials and equipment to be used and COSHH precautions.
- Frequency of cleaning and disinfecting tasks.

Operators will implement 'Clean as you go' principles and ensure that the appropriate cleaning chemicals are used. Chemicals need to be approved for catering use and the formulations should be appropriate for the task undertaken. The concentration of biocide/sanitiser is standardised according to the products approved by Batchwood School, but if not, advice should be obtained from the area manager. Cleaning chemicals should be stored away from food in a designated secure storage area which is only accessible to staff.

It is the responsibility of the catering manager to ensure that cleaning tasks are completed to the appropriate standards.

Water Supplies

Anglian Water supply water which meet stringent standards and is safe to drink. Deterioration of quality may occur once the water is distributed inside the building particularly if it passes though tanks or defective pipework. It is therefore important that any water used for drinking/ food preparation is mains supplied and not fed via an intermediate tank.

Signage should be provided identifying the mains fed/drinking water outlets in the kitchen.

Water for cleaning equipment or surfaces in contact with food should be clean and wholesome. Where this water is tank fed it is important that tanks and pipework are regularly cleaned and chlorinated. If this is not possible this water must be supplied direct from the rising main.

Doors/Windows

Where windows are openable and in constant use a risk assessment should be undertaken and if necessary, cleansable, well-fitting fly screens should be fitted. These have been fitted with a fly screen to the door. Window frames and associated structures should be capable of being effectively cleaned.

Doors should have smooth non-absorbent surfaces capable of being thoroughly cleaned; door handles and finger plates should be capable of disinfection.

Drainage

Drains and sewers must be kept clean and in good order and repair.

Covers need to be provided to floor channels where they present a safety hazard, otherwise they should remain uncovered to facilitate effective cleaning.

Inspection chambers should be placed outside food rooms unless double sealed and secured by means of screws.

Ventilation

The ventilation system should effectively remove heat and odours from the kitchen and flow from a clean to a dirty area. It should be capable of ensuring that the temperature and humidity within the kitchen is acceptable (ideally ambient temperatures should be below 26°C). Excessive moisture will cause the buildup of condensation and grease, and may allow mould and bacteria to multiply on surfaces. Extract canopies should be installed in accordance with manufacturer's specifications and placed over steam producing equipment such as cookers, boilers and steamers. Filters and drainage channels should be cleaned on a regular basis.

To comply with British Standards, ventilation must be interlocked with gas supply.

Lighting

Lighting should be sufficient to enable food handling/preparation activities to be carried out effectively and safely. Fluorescent tubes should be fitted with diffusers to allow effective cleaning and prevent contamination from a breakage.

Wash Hand Basins/Sinks

All wash hand basins should be easily accessible and should not be obstructed. They should be sited where food preparation takes place, and where practical, at the main entrance to the kitchen. In larger kitchens consideration should be given to providing separate basins in raw and ready to eat preparation areas to prevent cross-contamination. Ideally taps should be non-hand operable (i.e. lever or remotely operated) and consideration should be given to replacing these fixtures either during routine maintenance or when a refurbishment is carried out of the kitchen. The distribution system should be capable of providing warm water at 35°C - 45°C.

Twin sinks should be used to facilitate washing and disinfecting/rinsing equipment, and these should be provided with adequate supplies of hot and cold water. Separate sinks should be used for food washing/preparation. Where dishwashers are installed an additional sink is not necessary.

Preparation surfaces

Stainless steel is the best material as it is durable, smooth, impervious and readily cleansable. It should be considered in all new kitchens or where a refurbishment is taking place. Stainless Steel is fitted within Batchwood School kitchen.

Equipment

All equipment used in the kitchen must be maintained in good repair and condition and be capable of being effectively cleaned. It is important that equipment/utensils in contact with food are washed after use and the integrity regularly checked to ensure that there is no risk of contamination. All relevant equipment should be included on the cleaning schedule and cleaned in accordance with the method statement.

Fridges

Fridges should operate between 1- 4 °C and monitoring of temperatures should be carried out at the beginning and end of shifts in accordance with the standard operating procedures outlined in Section CCP2 – CHILLED FOOD STORAGE.

Corrective action, outlined in the standard operating procedures, should be taken when fridge temperatures exceed 5 °C.

There may be occasions where other organisations use equipment in the kitchen. In the case of fridges a clearly visible notice should be displayed on the door indicating that the fridge is for their use only.

Batchwood School staff have the authority to dispose of any unauthorised food placed in fridge/freezers by other persons.

Sanitary Conveniences

All WC compartments should have their own wash hand basins, supplied with hot and cold or warm water. Ideally taps should again be non-hand operable and consideration should be given to replacing these fixtures either during routine maintenance or when a refurbishment is carried out of the kitchen. Rooms containing sanitary conveniences must not communicate directly with a room where food is processed, prepared or eaten and there should be adequate natural or mechanical ventilation.

Staff Facilities

Outdoor clothing should be stored in a room separate from a food room unless suitable cupboards or lockers are provided.

Pest Control

It is a legal requirement to ensure that food premises are maintained in good repair and condition, and designed and constructed to prevent contamination by pests. All buildings should be adequately proofed, doors should be close-fitting and gaps, where wiring, pipes and girders pass through walls, should be adequately sealed (a mouse can pass through 6 mm gaps).

It is good practice to employ a pest control company to carry out regular inspection and treatment where necessary. The pest control contractor should be accredited with the Royal Society of Health (RSH) certificate in pest control or British Pest Control Association (BPCA) certificate or diploma. Premises managers/head teachers are responsible for ensuring that risk assessments are carried out and contracts are in place. A risk assessment should include a property survey to assess potential entry points and conditions in the premises which could allow harborage and spread of pests/vermin etc. Last Property survey undertaken January 2018 and awaiting results to inform risk assessment.

Effective proofing measures will control hazards at source and monitoring will alert managers to any problems present. Treatment is a last resort and will not guarantee the safety of food unless other measures are also considered.

In some areas the local Environmental Health Department can provide a pest control contract and where this is the case it is strongly recommended that their services are employed.

Waste Disposal

Designated external refuse areas should be provided and located away from kitchen doors and windows. Bins should be capable of being effectively cleaned and fitted with tight fitting lids to prevent insects, rodents and birds gaining access.

Food which is not intended for human consumption should be binned immediately or placed in designated receptacles labelled 'not for human consumption'.

Bins within the kitchen should be emptied on a regular basis and always at the end of the shift. If this is impracticable for any reason, then these bins should be fitted with tight fitting non-hand operable lids.

All bins should be cleaned on a regular basis.

Planned Preventive Maintenance

Premises managers have responsibility for ensuring that planned preventive maintenance programmes are in place to ensure that premises meet the aforementioned standards. In addition, there are proactive systems for responding to contraventions of these standards to ensure that food safety risks are effectively controlled.

General

The school has a general duty of care to ensure that anyone using the kitchen facilities and providing food to pupils, staff or the public, meet current food safety and hygiene standards. This includes 'Batchwood School' and any other meal service provider, as well as groups or individuals that provide food through breakfast clubs, snack shops, after school clubs, PTA events, lettings etc.

GLOSSARY:

AMBIENT TEMPERATURE

The temperature of the surrounding environment. Commonly used to mean room temperature.

BACTERIA

A group of single cell living organisms. Some may spoil food and some may actually cause illness.

BACTERICIDAL DETERGENT

Detergents used either for hand wash or equipment cleaning that not only remove dirt but also destroy micro-organisms. Their effectiveness is often reduced by heavy soiling and it is preferable to clean then disinfect as a two stage process.

BEST BEFORE DATE

Foods with relatively long shelf lives or do not cause risk of illness, may carry a "Best Before" or "Best Before End of ..." date code. This is advisory not mandatory, therefore it is not an automatic offence to possess such foods beyond their expiry date. It is not good practice to do so however, since, if there is a complaint about the food, the fact that it is out of date can be used to establish negligence. However, this policy states that all food beyond its 'best before' date must be discarded.

COMPLIANCE

Measures that satisfy the legal requirement.

COOK CHILL

System of food preparation in which food is prepared in advance to be reheated several days later. Strict control of chilled storage temperature is needed if the food is to remain safe.

COOK FREEZE

System of food preparation in which food is prepared in advance and then deep frozen. If properly packaged the food may be kept for several months with no loss of quality.

CRITICAL POINTS

Points at which hazards have to be controlled to ensure food safety.

CROSS - CONTAMINATION

The transfer of bacteria from contaminated (usually raw) foods to other foods. This may be:

By direct contact, i.e. stored next to each other. By drip, i.e. one is stored above the other.

By food handlers who handle one food then the other.

By equipment, used first for contaminated food.

DISINFECTION

Reduction in levels of contamination on food equipment or in food units, normally by the use of chemicals to kill micro-organisms. Disinfectants used must be suitable for use in food units.

DUE DILIGENCE

The legal defence, available in Section 21 of the 1990 Food Safety Act, that a person took all reasonable precautions and exercised all due diligence to avoid the commission of the offence.

ELECTRONIC FLY KILLERS

Equipment to control flies and other flying insects. Insects are attracted by UV lamps and destroyed on a high voltage grid.

FLY SCREENS

A mesh window/door guard to prevent ingress of flies.

FOOD BORNE INFECTION

Invasion of the body by pathogenic micro-organisms (transmitted by food).

FOOD HANDLER

Anyone who handles food AND anyone involved in a food business who may directly influence its hygienic preparation.

FOOD POISONING

Illness transmitted by food. Caused either by infection or intoxication. Symptoms commonly include diarrhoea and vomiting, nausea and stomach pain.

GASTRO-ENTERITIS

Illness of the digestive system. Typically, symptoms include diarrhoea and vomiting.

HACCP

Hazard Analysis Critical Control Point. A management tool that gives a structured approach to identification and control of hazards. Classical HACCP involves a multi-disciplinary expert team.

HAZARD

Anything that may cause harm to a person who eats the food can be of physical, chemical or microbiological nature.

HAZARD ANALYSIS

Identifying hazards, the points at which they could occur and the introduction of measures to control them.

HIGH RISK FOODS

If food poisoning bacteria are to grow and multiply to potentially dangerous levels they need moisture, warmth and a food source. The ideal medium for their growth is a moist protein food such as meat, fish, milk, or egg products. Such foods are classified as high risk foods if they can be consumed without further cooking, e.g. sandwiches, pies, pasties, ice cream, cream cakes, etc.

LOW RISK FOODS

Raw food or ingredients that are still to be cleaned or processed. Contamination of these foods is a low risk because later processing should make it safe. However low risk foods may transfer contamination to ready to eat foods, and they should be kept apart. Low risk foods also include many ambient stable foods such as bread, biscuits, cakes (but not cream cakes which are 'high risk'), cereals, and so on.

MEDICAL QUESTIONNAIRE

Form to be completed by new staff giving details of their recent medical history and that of close household contacts. Contact with certain infectious diseases may be transmitted by food handlers through food that they prepare.

MICRO-ORGANISMS

Any small living organisms especially bacteria yeasts, moulds and viruses.

PASTEURISATION

Heat treatment to kill bacterial cells but not spores. Most types of food poisoning bacteria do not form spores so pasteurisation will make food safer by killing the heat sensitive pathogens.

PATHOGEN

A micro-organism that may cause illness.

PEST

Animal life unwelcome in food units. Insects, birds, rats, mice and other rodents capable of contaminating food directly or indirectly.

pН

A measure of acidity. The scale runs from 1 (acid) to 14 pH, with 7 being neutral. Levels of pH below about 4.5 will normally prevent the growth of pathogenic bacteria.

PROOFING (AGAINST PESTS)

Structure of units, especially doors, windows and the entry point of service pipes, to prevent the entry of pests.

REPUTABLE SUPPLIER

All foods sold should be obtained from a reputable supplier, i.e. a well known branded supplier e.g. Walls, Heinz, Jacobs, etc., or from a supplier whose history is known to you and whose products have not given rise to rejection or customer complaint. If foods are purchased from unchecked suppliers, you run the risk of being held responsible if those foods are later found to be defective, since you have not taken reasonable precautions to ensure their safety. Many suppliers are now taking advantage of "accreditation schemes" which go a long way towards giving confidence in their products.

SANITISE

Ordinary detergents such as soaps, washing-up liquids, etc. may be effective at removing dirt but will not kill bacteria. To ensure that food contact and hand contact surfaces are really safe, they should be cleaned with a disinfectant which kills bacteria or a sanitiser which combines cleaning power with the ability to kill bacteria. Look for the words "sanitiser", "disinfectant" or "bactericidal" on the label and use the compound strictly according to the instructions.

SHELF STABLE

Foods which do not normally suffer microbiological spoilage at room temperature.

SNEEZE SCREEN

Screen, usually glass or another transparent material, fitted to some food display units. May play a small part in reducing airborne contamination of the food.

SPORES

Protective layers are formed by some bacteria and many moulds which are able to withstand adverse conditions including drying and heat. Some spores can withstand very severe heat treatment such as boiling for one hour.

STERILISE

Treatment with heat or chemicals to kill all micro-organisms and viruses. Sterilisation will kill spores.

TOXIC/TOXIN

Poisonous substance. May be contaminated from external sources for example, chemical spillage, or produced by growth of micro-organisms.

UHT

Ultra Heat Treatment. A high temperature, short time pasteurisation process. Used commonly for dairy products.

USE-BY DATE

Foods with short shelf lives or "high risk foods" capable of causing illness if they deteriorate will carry" Use by" date. This date is mandatory, i.e. it is an automatic offence to possess for sale foods beyond their use-by date,

unless in a container clearly marked for disposal. It is also illegal to cover, change or obliterate a use-by date. Foods become out of date at midnight.

VIRUSES

Microscopic particles. Some are transmitted by food and may cause illness. Viruses cannot multiply or grow in food.

YEASTS AND MOULDS

Microscopic organisms. Some are desirable in food and are important to its characteristics, for example, bread fermentation and the ripening of cheese. Others may spoil food and a few may cause illness.

APPENDIX 1

SUMMARY OF PROCESS CONTROLS (GENERIC)

CCP = Critical Control Point

Step	Hazard	Control	CCP	Operating	Critical	Monitoring
				conditions/Limits	Limits/Action	
Receipt of	Micro Growth	A: The temperature at the point of	CCP1	A. Chilled Food1-	Between 5-8 ^O C	A: The temperature of incoming foods should be monitored and a temperature log
Food	&	delivery should not exceed 5 ⁰ C for		4 ⁰ C Frozen -15-	manager to assess if	maintained (vehicle records checked and/or random temp checks of food)
	Contamination	Chilled Food and -15 ^O C for Frozen		18 ⁰ C	food can be used	B: Checks to ensure suppliers are on approved list/supplier reviews
		Food		B. Approved	(above 8 ⁰ C discard)	C: Daily checks by manager/Internal audits
	Physical &	B: Effective supplier assurance		nominated		
	chemical	C: Foods protected from sources of		suppliers/procedures		
	contamination	contamination		followed		
				(Prerequisites in		
				place)		
Chilled storage	Micro Growth	A: Food should be stored below 5 ⁰ C	CCP2	Chilled Food stored	Between 5-8 ^O C	A: Product temperature/between pack temperatures recorded on daily log and
	&	B: Food should be segregated from		between1-4 ⁰ C	manager to assess if	signed off by catering manager at the beginning and end of each shift. Visual
	Contamination	other sources of contamination			food can be	examination of integral temperature indicators should take place throughout the day.
					consumed (above	B. Staff training/supervision on temperature monitoring and segregation procedures
	Physical &			(Prerequisites in	8 ⁰ C discard)	and their competence measured
	chemical			place)		Internal Audit
	contamination					
Dry Goods	Micro Growth	A: Stock rotation operated and stock	CCP3	Dates current, in	Remove out of date,	A: Daily check of stores/monitoring of date codes
storage	&	levels controlled		good condition and	defective or damaged	B, C & D: Daily checks by manager
	Contamination	B: Stores well maintained and clean dry		food protected from	goods.	Internal audits
		& well ventilated		contamination		
	Physical &	C: Foods protected from sources of				
	chemical	contamination				
	contamination	D:Loose contents in tight fitting lidded		(Prerequisites in		
		containers		place)		

step rearran control CCP Operating continuis/Links Critical Links/Action Monitoring Figzen Micro Growth & B A: Foods to be stored below -16 & 18 °C Contamination CCP4 15-18°C Frozen contamination Any high risk RTE sheet/above Critical addition A: Temperature/visual and physical checks Physical & chemical contamination A: Foods frozen immediately on receipt a differences CPP4a (15-18°C Frozen contamination Any high risk RTE piace) A: Temperature/visual and physical checks Freezing Micro Growth & Contamination A: Foods frozen immediately on receipt a differences CPP4a (15-18°C Frozen piace) Any high risk RTE social frozen (Prerequisites in piace) A: Temperature/visual and physical checks Freezing Micro Growth & contamination A: Foods frozen immediately on receipt g & °C; B: Only specified foods frozen (must be contamination CPP4a (Prerequisites in piace) 15-18°C Frozen (Prerequisites in piace) Any high risk RTE foods frozen (Prerequisites in piace) A: Temperature/visual and physical checks Thawing B: Foods protected from sources of contamination CPF4a (Prerequisites in piace) Any high risk RTE food should be segregated from all contamination A: Staff training/supervision B: Daily checks by manager/internal audits B: Daily checks by manager/internal audits				0.05		• • • •	
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A the thawing operation. below 8 °C Contamination B: Food should be segregated from all sources of contamination. (Prerequisites in place) Physical & Image: Contamination Image: Contamination	Thawing	Micro Growth	A: Food should not exceed 8 ⁰ C during	CCP5	I nawed in fridge	Above 8 ^o C discard	A: Start training/supervision
Contamination B: Food should be segregated from all sources of contamination. Physical & (Prerequisites in place) contamination place)		&	the thawing operation.		below 8 ^O C		B: Temperature/Visual and physical checks
sources of contamination. (Prerequisites in Physical & (Prerequisites in chemical place)		Contamination	B: Food should be segregated from all				
Physical & (Prerequisites in chemical place) contamination Image: Contamination			sources of contamination.				
contamination place)		Physical &			(Prerequisites in		
contamination		chemical			place)		
		contamination					

Step	Hazard	Control	CCP	Operating	Critical	Monitoring
				conditions/Limits	Limits/Action	
Preparation	Micro Growth	A: Segregation from sources of	CCP6	1 hour max	Use immediately or	A: Staff training/monitoring.
	&	contamination.		allowed for	Discard if preparation	B: "
	Contamination	B: Separation of raw and high risk food		completion of	takes more than 1	C: "
		C: Regard to personal hygiene		activity.	hour.	D: "
	Physical &	D: Cleanliness of equipment				E:
	chemical	E: 30 minutes maximum for completion		(Prerequisites in		
	contamination	of activity.		place)		
Cooking	Survival	A: Unprocessed meat, fish, poultry and	CCP 7	Cooking equipment	Below 75 ⁰ C	A: Core temperatures taken. Records of temperatures should be maintained. The
	Micro Growth	dairy other high risk products should be		checked to ensure	(continue cooking	day and time of cooking should also be recorded for the purpose of traceability. The
	&	cooked to a minimum core temperature		that temperatures	phase and re check	integrity/effectiveness of cooking equipment should be routinely assessed.
	Contamination	of 75 ⁰ C. (Core temperatures taken)		above being 75 ⁰ C	to ensure 75 ⁰ C is	B: Staff training monitored/ Daily checks by manager/internal audits.
		B: Portions should be less than 2 Kg.		<u> </u>	attained) Record	
	Physical &	C: Foods protected from sources of		(Prerequisites in	action	
	chemical	contamination		place)		
	contamination	D: Separation of raw and high risk food		. ,		
Chilling	Micro Growth	A: Foods held at room temperature for	CCP 8		Beyond 2 hours	A: Staff should monitor the time at room temperature to ensure that food is chilled
Cg	&	maximum of two hours then refrigerated	00.0	Chilled to 8°C within	consume food	within two hours.
		B: Separation of raw and high risk food		2110015	immediately or	B: Daily checks by manager/internal audits
	Contamination	D. Ocparation of raw and high loc lood			discard	b. Daily checks by manager, internal addits.
	Physical &			(Prerequisites in		
	chemical			piace)		
	contamination					
Chilled	Micro Growth		CCP2	Chilled Food stored	0-	A. Product temperature/between pack temperatures recorded on daily log and
Storage	&	A: Food should be stored below 5°C	0012		Between 5 - 8 °C	signed off buy catering manager at the beginning and end of each shift. Visual
otorage	Contamination	B: Food should be segregated from		between1 - 4°C	manager to assess if	examination of integral temperature indicators should take place throughout the day
	Contamination	other sources of contamination		6	food can be	P: Ctaff training/autom vision on temperature monitoring and approaction procedures
	Physical 8			(Prerequisites in	consumed (above	b. Stan training/supervision on temperature monitoring and segregation procedures
	chomical			piace)	8 ⁰ C discard)	and their competence measured
						Daily checks by manager/internal audits
	contamination					

Step	Hazard	Control	ССР	Operating conditions/Limits	Critical Limits/Action	Monitoring
Preparation/	Micro Growth	A: Segregation from sources of	CCP6	1 hour max	Use immediately or	A: Staff training/monitoring/internal audit
Meal	&	contamination.		allowed for	Discard if preparation	
Assembly	Contamination	B: Separation of raw and high risk food		completion of	takes more than 1	
		C: Regard to personal hygiene		activity.	hour.	
	Physical &	D: Cleanliness of equipment				
	chemical	E: 30 minutes maximum for completion				
	contamination	of activity.		(Prerequisites in		
Transport/	Micro Growth	A: Meals dispatched should not exceed	CCP 9	Delivery time should	Discard food if	A: Critical time/temperature limits should be monitored
Distribution	&	8 ⁰ C for chilled food and should be above		not exceed 1 hour.	delivery takes more	1. Prior to dispatch
	Contamination	63 ^O C for hot food and be delivered within one hour			than 1 hour.	2. On arrival at establishment.
	Physical &	B: Foods protected from sources of		(Prerequisites in		B:Daily checks by manager/internal audits
	chemical contamination	contamination		place)		
Service	Micro Growth	A: Chilled food displayed below 8 ^O C	CCP10	10a) Hot food	Manager to discard	A-C: Temperatures monitored after 1 hour. Recorded on temperature log.
	&	B: Hot food above 63 ^O C	а	maintained above	food if maximum	Daily checks by manager/internal audits
	Contamination	Between these temperatures 1 hour max	CCP	65 ⁰ C.	display periods	
		display permitted	10b		exceeded.	
	Physical &	D: Relevant boxed/hermetically sealed				
	chemical	high risk foods can be taken from display		10b) Chilled food		
	contamination	and placed under refrigeration (24 hours		kept below		
		max) only if temperatures of 8 ^O C have		8 ^O C or max 2 hour		
		not been exceeded		duration at ambient		
		C: Foods protected from sources of		temps.		
		contamination				
				(Prerequisites in		
				place)		

APPENDIX 2:

Batchwood School provides school meals to 75 students and 48 staff daily.

We currently provide snacks at break times and breakfast.

FOOD SAFETY FORMS

CONTENT

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FOOD DELIVERY RECORD

Date of Delivery	Supplier	Delivery note or Invoice Number.	Order Correct √ or X	Product defect/fault	Corrective Action	Temp °C	Checked by Initials

Goods Received Checklist HACCP 1 (June 2004)

(Retain on file for 6 months) up to 8°C).

Target Food Delivery Temperatures:

Chilled Food **CCP**: At or below 5°C (but accept

Frozen Food: At or below -18°C (accept up to -12°c) Measure between pack temperatures or Vehicle temp

BATCHWOOD SCHOOL Number 643

REFRIGERATION & FREEZER TEMPERATURES

Week Commencing

Fridges and chill cabinets must operate between 0° and +5°C. Circle temperatures outside these perimeters and indicate the action taken.

		Mon	Tue	Wed	Thu	Fri	Sat	Sun	Action	Initials
	Time	°C								
1.	am									
	pm									
2.	am									
	pm									
3.	am									
	pm									
4.	am									
	pm									
5.	am									
	pm									
6.	am									
	pm									
7.	am									
	pm									
8.	am									
	pm									

Freezer Temperatures

Freezers must operate below – 15° C. Circle temperatures outside this perimeter and indicate action taken

		Mon	Tue	Wed	Thu	Fri	Sat	Sun	Action	Initials
	Time	°C								
1.	am									
	pm									
2.	am									
	pm									
3.	am									
	pm									
4.	am									
	pm									

Manager Check.....

Date:....

DAILY RECORD COOKING TEMPERATURES

BATCHWOOD SCHOOL: Date/ Day :

Food Item	Date	Time	Product	Temperature	Checker	Corrective Action
_						
Target Temper	rature > 75°	+ juices clea	ar			

MANAGER CHECK_____DATE:_____

HOT FOOD SERVICE TEMPERATURE

BATCHWOOD SCHOOL. Date COMMENCING:_____

Location	Date	Time	Product	Temperature	Checker	Corrective Action
Hot						
Cupboard Roin Maria						
Dain wane						
MANAGE				DATE	•	

BUFFET DISCLAIMER

1 DISCLAIMER NOTICE re: removal	of food from a function				
The Batchwood School	does not accept				
liability or responsibility for the condition and	safety of any food remaining				
fromfunction or	ו the				
after its removal from the above mentioned u	nit. Full responsibility for ensuring food				
is kept protected from contamination and at a safe temperature rests with the customer.					
Signed Custo	omer				
Date Print N	ame				
Signed:Cater Date Print N	ing Manager				

TEMPERATURE PROBE CALIBRATION RECORD

BATCHWOOD SCHOOL

- 1. Carry out on the first Monday of each month
- 2. Use ice and boiling water

Month	Date	Ice Temp/Boiling Temp	Action Taken	Signed
January				
February				
March				
April				
Мау				
June				
July				
August				
September				
October				
November				
December				

NOTE: Target : 0°C (+ or – 0.5°C) 100°C (+ or – 0.5°C)

BI- Annual Checklist

This checklist is to monitor standards and to control risks as detailed in this Manual. It should be completed bi-monthly by the Health & Safety Manager/School Business Manager or School Business Manager. Boxes should be ticked if satisfactory. If not, remedial action(s) must be noted

		TICK	REMEDIAL ACTION REQUIRED
1.	All temperature records up-to-date		
2.	All training records up-to-date		
3.	All food from nominated suppliers		
4.	High standards of cleanliness throughout unit.		
5.	Hazard analysis completed where appropriate and policy signed / reviewed. Kitchen staff aware of their responsibilities.		
6.	Any complaints dealt with as per company procedure		
7.	Unit pest free		
8.	Observe kitchen staff – are they handling food correctly? Satisfactory personal hygiene standards of staff		
9.	All food covered, dated, stored as per policy		
10.	Weekly Manager's Checklist completed every week		

Health & Safety Manager/School Business Managers

CLEANING SCHEDULE School Name:

Week Commencing Monday:

Item	Job	By Whom	Cleaning	Protective	Mon	Tues	Wed	Thur	Fri
	Description	(As per Rota)	Chemical	Clothing & Equipment	Completed by	Completed by	Completed by	Completed by	Completed by
Floors									
Walls									
Wash Hand Basin & Taps									
Work Surfaces									
Sinks and Taps									
Potato Peeler									
Steamer									
Can Opener									
Hot Cupboard									
Dry Goods Store									
Mixer & Stand									
Fridge/Freezer Doors									
Trolleys									
Management Check by:									

Cleaning Schedule HACCP

MICROBIOLOGICAL HAZARDS ASSOCIATED WITH FOOD

Food borne illness includes both "food poisoning", which is generally taken to apply to illnesses characterised by diarrhoea and/or vomiting following the consumption of contaminated food, and other illnesses such as listeriosis and botulism, which give rise to symptoms and disease in parts of the body other than the alimentary tract.⁽²⁾

Micro-organisms which cause illness are known as pathogens and in most cases large numbers need to be consumed prior to the onset of symptoms. Multiplication takes place in susceptible foods and the infective dose for many bacteria is 10⁶ cells.

Some infections, however, are food borne and a growth medium such as food is not required. The infective dose can be as low as 50 cells and symptoms are often "systematic" as in the case of typhoid.

Food poisoning bacteria are responsible for the majority of food poisoning notifications in the UK although viruses are increasingly becoming an important source of infection.

A hazard means the unacceptable contamination, growth, and/or survival of pathogenic micro-organisms or their toxins.

i SOURCES Of CONTAMINATION

The main sources of contamination are:

1) Man

2) Raw food and water

3) Insects, rodents, animals, and birds

4) The Environment including soil and dust

1) Man:- People commonly harbour food poisoning organisms in the nose, mouth, intestine and skin.

Staphylococcus bacteria is present in the nose and skin of between 10 - 40% of the population. In one case study the numbers Staphlococcus aureus present in the nose have been 10⁴ per swab⁽¹³⁾. People can become symptomless carriers of certain infections. People who have had Salmonellosis can carry the infective strain for up to a year.

2) Raw food and water:- Food such as raw meat, shell fish, poultry and eggs are potentially contaminated with bacteria even when they are produced under hygienic conditions.

Although not an ideal medium for growth, contaminated / untreated water can carry food borne or food poisoning micro-organisms.

3) Insects:- Insects can carry Salmonella, Campylobacter and Staphylococcus bacteria which will readily multiply in food.

4) The Environment:- Soil and dust is present in all environments including the most hygienic food premises. Unfortunately soil and dust harbour pathogens such as clostridium perfringens which can enter food premises via raw vegetables such as potatoes, carrots and lettuce.

Routes of Contamination

Contamination will be a problem if high risk foods are in direct contact with raw food, contaminated water, the environment, pests, personnel etc., but in many cases bacteria are transferred indirectly by utensils, equipment and personnel.

ii FACTORS AFFECTING GROWTH

Bacteria grow exponentially and the time between each division (generation time) is usually 10 - 15 minutes under ideal conditions. Given a generation time of 10 minutes 1,000 bacteria could proliferate to 1,000,000 in only 1 hour 40 minutes. 1,000,000 bacteria per gram of food may cause food poisoning and 1,000 bacteria per gram is not an uncommon level of contamination.

iii BASIC REQUIREMENTS FOR PATHOGENS

There are a number of factors which influence the growth of bacteria and these include.

Nutrients

Most bacteria require sugar, amino acids fats and minerals and the most high risk foods tend to be meat, fish, poultry, and dairy products.

pH (Hydrogen Ion concentration)

The majority of pathogenic micro-organisms prefer a pH near neutrality which is 7. Most bacteria will not grow in food with a pH below 4.5 and this allows lower heat processing temperatures to be used in production.

Water Activity (a_w)

The amount of moisture in any foods available to bacteria is normally considered in terms of water activity. The a_w of pure water is 1.00 Fresh meat has an a_w of 0.95 - 1.00 and dried egg has an a_w of 0.60. Many bacteria will not grow below 0.95 a_w though some yeast's and moulds can tolerate levels as low as 0.60 a_w .

Temperature

Bacteria have a maximum and minimum temperature for growth between which there is an optimum temperature when cell production is the most rapid. Usually bacteria are separated into four groups

	Optimum	Range	;	Importance
Psychrophiles	<20°C	-8 to 25⁰C	includ	es bacteria which can cause spoilage in refrigerators & cold stores.
Psychrotrophs	>20⁰C	-5 to 40ºC	Includ	e C.botulinum type E. Yersinia enterocolitica. Listeria Monocytogenes and Aeromonas hydrophila.
Mesophiles	20° to 40°C	10º to	56ºC	Include most common pathogens which cause food poisoning.

Theromphiles >4

>45°C

35° to 80°C Important in canning - some are very heat resistant and if not destroyed will cause spoilage if cans are stored at high temperatures.

Survival

Cooking temperatures of 70°C will destroy the vegetative stages of bacteria moulds and yeasts but some of these produce spores and toxins which are much more resistant to heat. Decimal reduction times (D values) are commonly made to compare the efficiency of heat treatment, and this is defined on the time taken to reduce the number of cells to 10% of the original number. The following pathogens profiles include information relating to the 'D' Values to each Micro-organism.

iv PATHOGEN PROFILES

SALMONELLA:- Salmonella has been frequently isolated from poultry, red meat, and dairy products. Surveys carried out in the UK in the late 1980's have shown that 80 - 89% of chickens/turkey carcasses are contaminated with salmonella⁽¹⁴⁾. Beef tends to be contaminated to a lesser extent; in 1975 surveys indicated that 4% of UK beef was contaminated, though meat from Greece was found to have been as high as 20%⁽¹⁵⁾. The infective dose for Salmonella is between 10⁴-10⁴ per gram though lesser doses have been shown to initiate food poisoning symptoms⁽¹⁸⁾. Symptoms include vomiting, diarrhoea, nausea, and fever, lasting several days and fatalities have occurred. In 1984 an outbreak of S.typhimurium at Stanley Royal Hospital, Wakefield involved 450 cases and 19 deaths.

Heat resistance:- Salmonella is not particularly heat resistant S.typhimurium for example has a 'D' value of 0.003 minutes when subjected to pasteurisation temperatures(71.7°C).

CLOSTRIDIUM PERFRINGENS:- Clostridium perfringens may be found in a variety of foods including raw vegetables, raw ground meats, raw turkey/chicken and dairy products. In one survey it was isolated from 62% of turkey samples and 47% of beef samples. It is sometimes associated with rolled joints of meat because of its affinity for anaerobic conditions.

Heat resistance :- The spores of Clostridium perfringens are very heat resistant and can survive temperatures in excess of 100°C for periods of 15 minutes or more.

Symptoms :- Diarrhoea lasting a couple of days. The symptoms associated with this organism are much less severe than those associated with Salmonella and this may account for the low incidence of reporting to doctors surgeries.

STAPHYLOCOCCUS AUREUS:- The primary habitat for Staph. aureus is on the skin, and the nose and throat of man and animals. The organism is found in a variety of foods, often as a result of cross contamination from food handlers. The population of S. aureus needs to have reached a level of 10⁶ per gram before sufficient toxin is produced in food ⁽¹⁶⁾.

Heat resistance- Vegetative cells are readily killed by pasteurisation but the toxin may still be active after boiling for 30 minutes in some foods⁽¹⁶⁾.

Symptoms- Nausea, vomiting, and diarrhoea lasting 1-2 days.

CAMPYLOBACTER JEJUNI:- C.jejuni is found in the intestine of animals, farm wastes and sewage. The foods commonly contaminated include poultry, beef, pork and lamb and recent surveys in the UK have shown contamination rates as high as 50% for poultry and 15% for beef. ⁽¹⁴⁾ Campylobacter is a common cause of human gastro-enteritis, however it is not always reported as symptoms are less severe than salmonella, also the incubation period can be up to 5 days making detection of the source problematical. The infective dose is thought to be as low as 500 cells. ⁽¹⁴⁾

Heat resistance :- The organism is readily killed by the application of heat. Reported 'D' values for meat are less than a minute at 60°C.

Symptoms- headache, nausea, diarrhoea, and abdominal pain lasting up to 3 weeks.

LISTERIA MONOCYTOGENES:- This organism is ubiquitous in nature and is found in a variety of foods. It can grow at temperatures close to freezing and the infective dose is not known. The infective dose for immune compromised people is thought to be very low and the source of infection is rarely identified because of the very long incubation period which can be up to 70 days.

Heat resistance :- It is readily killed by pasteurisation. The 'D' value approaches 2 seconds when milk is heated to 71.7°C. (14)

Symptoms :- Although the incidence of the disease is rare, the symptoms are severe and start with a flu-like gastro-enteritis sometimes followed by septicaemia, and meningitis. Miscarriages can occur in pregnant women. The mortality rate is 30%.

BACILLUS CEREUS:- The primary source of this organism is unclear though many foods support its growth including those containing meat, rice, milk, and certain vegetables. This pathogen may produce two toxins: one which is produced in the intestine following ingestion of large numbers of cells (type A toxin) and a toxin which pre-formed in food (type B toxin). The minimum infective dose found in foods implicated in outbreaks in the UK is 10³ per ml.

Heat resistance:- Vegetative cells are killed in a few minutes when subjected to boiling temperatures but spores are resistant to up to an hour at 100°C. The toxin can survive a temperature of 126°C for 90 minutes.

Symptoms:- Toxin A symptoms include diarrhoea, abdominal pain, and nausea but vomiting is rare. Toxin B symptoms include vomiting but not always diarrhoea. Illness lasts for a couple of days.

YERSINIA ENTEROCOLITICA:- the organism is naturally found in water, pigs, rodents and pets and has been associated with raw milk, ice cream, vegetables and raw pork.

The organism can grow at temperatures close to freezing and the infective dose is about 10⁶ per gram

Heat resistance - the pathogen is readily destroyed during exposure to pasteurisation temperatures

Symptoms - these include diarrhoea, fever and vomiting.

CLOSTRIDIUM BOTULINUM:- In the United Kingdom this organism has been found in lake mud and in 10% of soil samples. Human botulism has been caused following the consumption of canned meat and fish although the infection is very rare in this country. The infective dose for the toxin which causes illness is very low 0.2^{mg} toxin ⁽¹⁷⁾.

Heat resistance vegetative cells are destroyed by pasteurisation temperature and the toxin is destroyed after heating at 85°C for 5 minutes, however some proteolytic strains have spores that can withstand temperatures in excess of 120°C. A botulinum cook is defined as that giving a 12 log cycle kill in examples destruction of 10¹² spores.

In commercial terms this is a 3 minute cook at 121°C and this combination is commonly used in the canning industry where the risk is highest, because the product is stored for long periods at ambient temperature under anaerobic conditions.

Symptoms - Botulism is a very serious illness which causes dizziness, blurred vision, paralysis and can result in death.

PROTOZOA:- Protozoa are readily found in water, sewage and in the case of Cryptosporidium parvum, the organism has been isolated from in raw milk.

The infective dose can be as low as 10 oocysts

Heat resistance:- in most cases boiling is an effective control measure.

TOXIGENIC MOULDS:- Moulds found on bread, cheese, nuts etc. produce mycotoxins which can cause acute infections and chronic illnesses for example:- aflatoxin in nuts can cause acute intoxication and cancer as a long term effect.

VIRUSES:- Viruses are normally found in the atmosphere, water and on all living organisms. As viruses are unable to reproduce themselves they can therefore only be carried by food and will not multiply within food.

Viruses have been isolated from many foods including shellfish, milk, cream, fruit juices, salads, cold meat and ice cubes.

Viruses associated with food poisoning include Hepatitis A, small round structural virus (norwalk virus), Parvo virus, Rotavirus, Calicivirus, Adenovirus and Astrovirus.

The infective dose is thought to be as low as 100 virus particles per person infected ⁽¹⁷⁾.

Heat resistance:- in most cases 90% of virus particles are inactivated above 60°C, however, the Hepatitis A virus can withstand temperatures in excess of 100°C.

Symptoms:- Typical symptoms include Gastro enteritis, Fever, Vomiting, Diarrhoea