

How to Write a HACCP Plan for Food Safety

Foodborne illness affects an estimated 600 million people every year, and for roughly 3,000 of them the outcome is fatal. Despite advances in technology and medicine, contamination risks persist and, in some cases, have grown more severe. Learning how to write a HACCP plan gives your operation a structured way to identify hazards, control them at critical points, and document every safeguard so that both consumers and your business stay protected. This guide walks through each part of a HACCP plan, from scoping your process to keeping the records that prove compliance.



A graphic of the Earth surrounded by figures representing people, with the caption "600 million people affected annually"

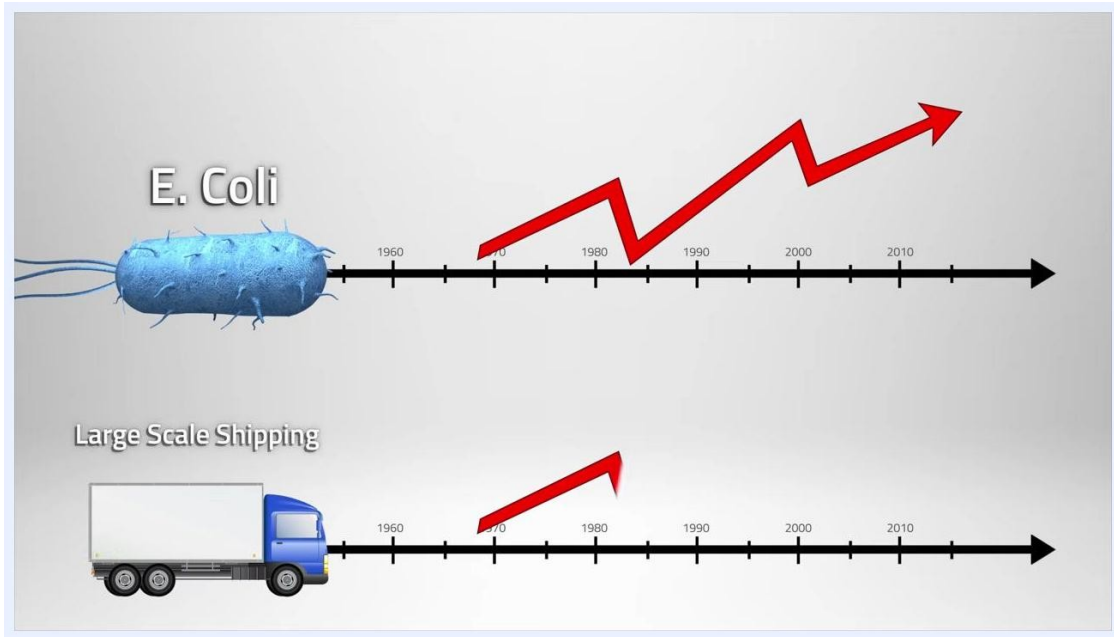
Prerequisites

Before you draft a HACCP plan, you need a clear picture of how foodborne pathogens spread and why standard controls matter.

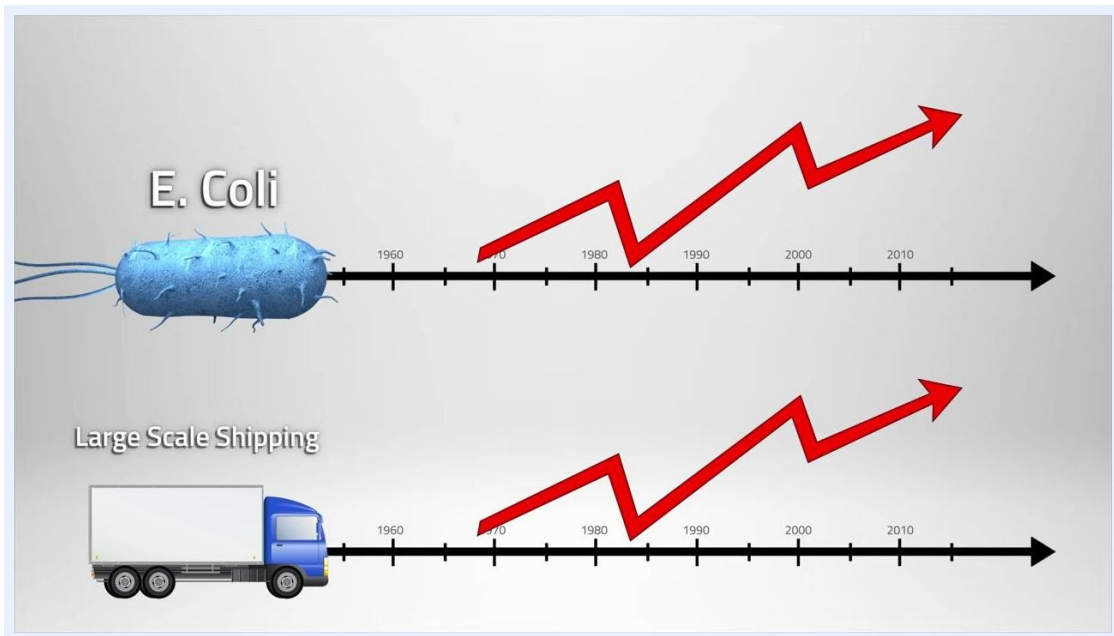
- Globalization and large-scale shipping have made it easier for pathogens to travel and persist, which is why continuous monitoring across the supply chain is essential.

- Some pathogens, such as certain E. coli strains, have evolved beyond common food-poisoning symptoms to cause kidney damage and resist antibiotics, so controls must be rigorous rather than assumed adequate.

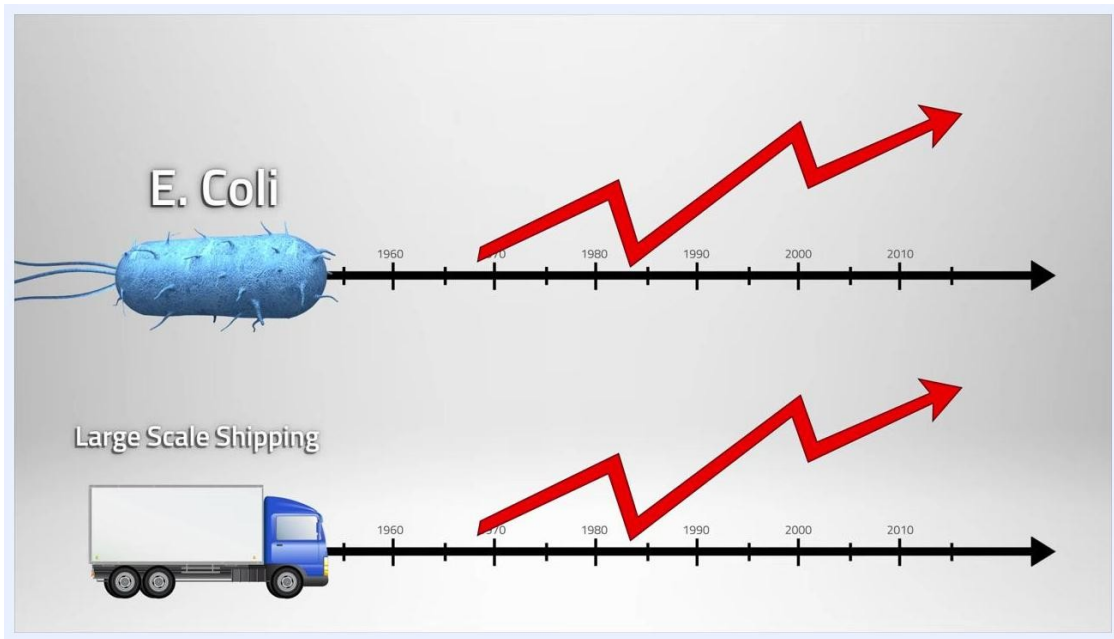
- You should understand the three hazard categories (biological, chemical, physical) and have access to monitoring tools such as data loggers before you begin building the plan.



An illustration of a microscope, a virus, and prescription medicine representing the relationship between technology, pathogens, and medicine



A timeline graphic spanning 1960 to 2010, marking the era of increased global travel and trade



A graph comparing E. coli cases and large-scale shipping volume from 1960 to 2010, both trending upward

HAZARDS		
Biological	Chemical	Physical
▪ Bacteria ▪ Viruses ▪ Parasites ▪ Molds	▪ Pesticides ▪ Processing chemicals ▪ Drug residue ▪ Allergens	▪ Bones ▪ Pits ▪ Bugs ▪ Glass ▪ Metal ▪ Hair

A magnified image of E. coli listed alongside common food poisoning symptoms, kidney damage, and antibiotic resistance

Process scope

A HACCP plan begins by defining the boundaries of the process you are monitoring: the product, the facility, the preparation steps, and how the product

reaches the consumer. The source material illustrates this with a generic supply chain that moves food from the butcher through transportation to the supermarket, with monitoring applied at every stage of that journey.

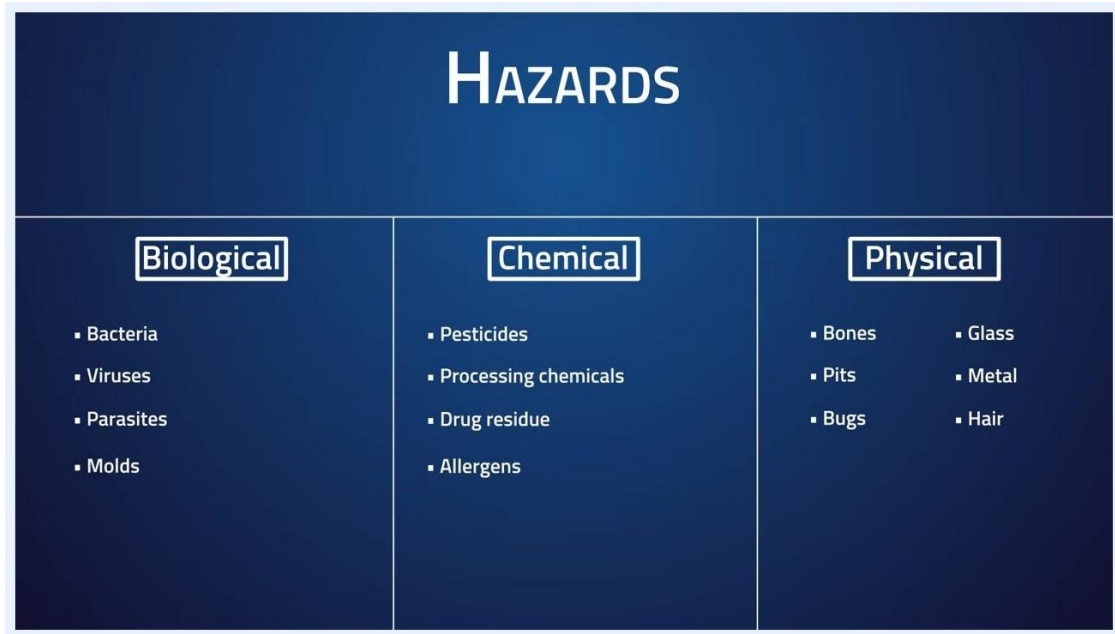
Within a processing facility, the relevant environments typically include:

- Prepping/Cutting Station
- Walk-in Cooler
- Walk-in Freezer
- Packaging
- Shipping

When you write your own plan, replace this generic flow with your specific product, facility location, preparation steps, service method, and intended consumers.

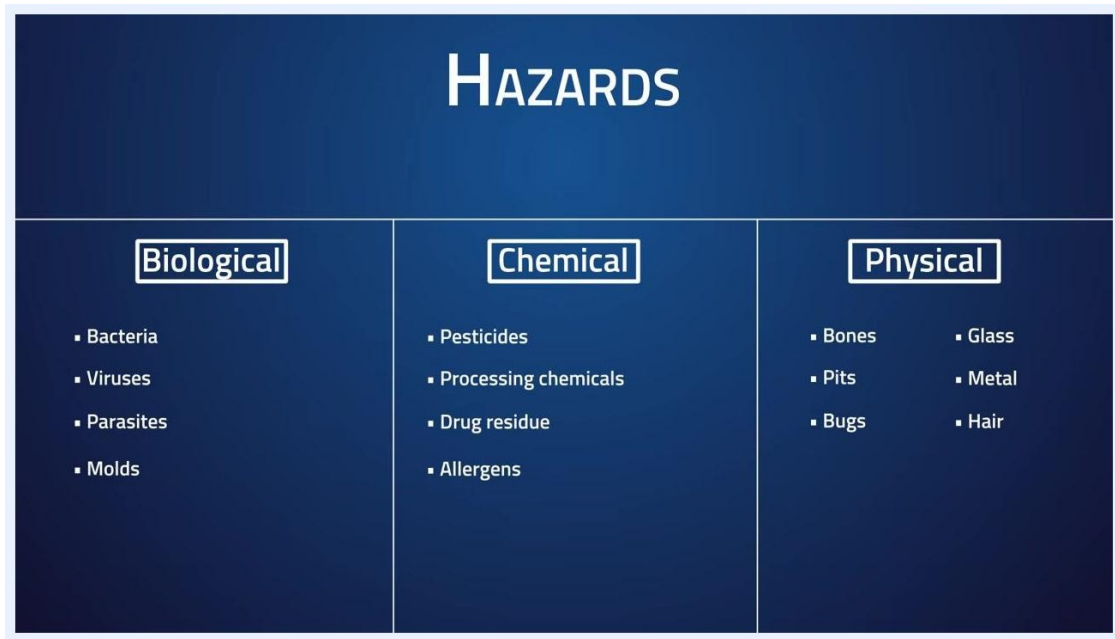
Hazard analysis

Once your scope is defined, identify the biological, chemical, and physical hazards that could make food unsafe at each stage. A HACCP plan exists specifically to catch these hazards before they reach the consumer.



Red banner with the number 1 and the text "Conduct Hazard Analysis"

Hazard type	Examples
Biological	Bacteria, viruses, parasites, molds
Chemical	Pesticides, processing chemicals, drug residue, allergens
Physical	Bones, pits, bugs, glass, metal, hair



An illustration of a consumer holding groceries and a businessperson holding a briefcase, each paired with a safety and credibility meter

Document which of these hazards could occur at each process step you defined in your scope, since the same hazard category (for example, bacteria) may appear at multiple stages such as prepping, storage, and shipping.

Critical control points

A critical control point (CCP) is any stage in your process where you can apply control to prevent or eliminate a food safety hazard. Identify CCPs by reviewing every step, procedure, and environment where food is stored, processed, or handled, including storage environments such as walk-in coolers, prep stations, and shelving areas.

HAZARDS		
Biological	Chemical	Physical
▪ Bacteria ▪ Viruses ▪ Parasites ▪ Molds	▪ Pesticides ▪ Processing chemicals ▪ Drug residue ▪ Allergens	▪ Bones ▪ Pits ▪ Bugs ▪ Glass ▪ Metal ▪ Hair

A chart listing Biological, Chemical, and Physical hazards with specific examples under each category

Common CCPs identified in food processing include:

Critical Control Point	Critical limit (example)	Responsible role	Required equipment
Prepping/Cutting Station	Facility-defined temperature/humidity range	Processing staff	Data logger
Walk-in Cooler	Example: Min 3.30°, Max 7.04°, Avg 4.57°	Storage staff	Wireless temperature/humidity data logger
Walk-in Freezer	Facility-defined temperature range	Storage staff	Data logger
Packaging	Facility-defined parameter range	Packaging staff	Data logger
Shipping	Facility-defined parameter range	Shipping/logistics staff	Data logger, monitoring software



A worker in a storage room with organized shelving of food containers, illustrating a storage environment as a potential critical control point

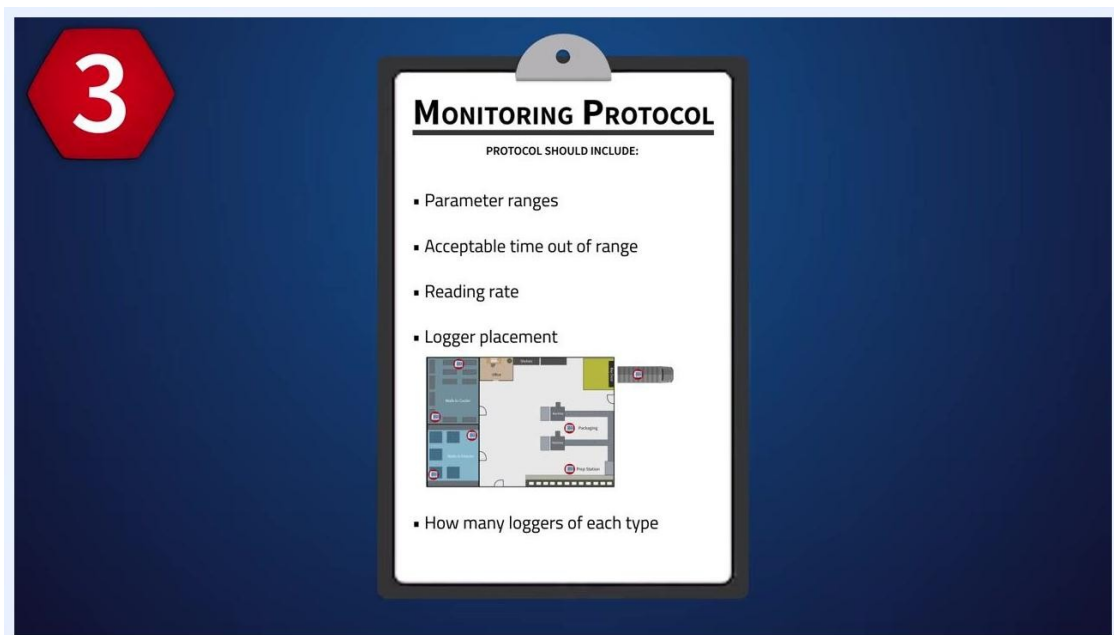
For each CCP, select the logger model appropriate to the conditions it will face, including options built for extreme high or low temperatures, to ensure accurate monitoring at every stage of food processing.

Monitoring

Monitoring is how you confirm that each CCP stays within its critical limits. Use data loggers to record temperature and humidity at every stage of shipping and processing, covering every transition from the butcher, through transportation, to the supermarket.

Your monitoring protocol document should define:

- Acceptable parameter ranges for temperature and humidity.
- The maximum acceptable time food can remain outside those ranges.
- The rate at which the data logger collects readings.



A monitoring protocol checklist on a clipboard listing parameter ranges, acceptable time out of range, and reading rate

You also need to document where loggers are placed and how many are required. Record logger placement across all CCPs, coolers, storage, and processing areas, and specify how many loggers of each type are needed per zone.

What is checked: Temperature and humidity at each CCP.

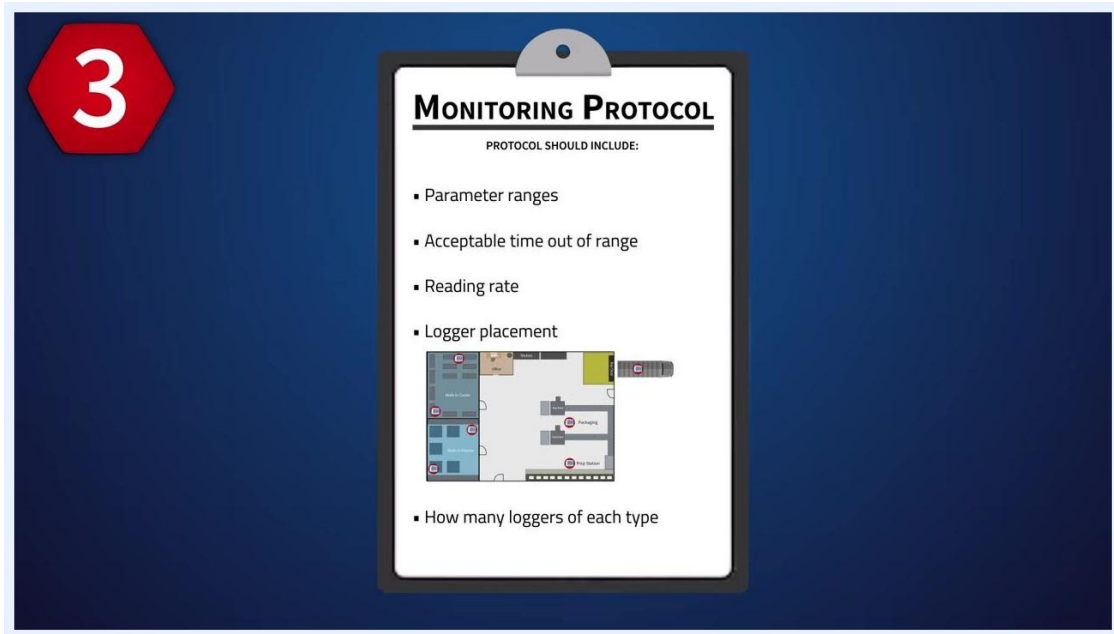
Frequency: Continuous, based on the reading rate defined in your protocol.

Method: Wireless data loggers that transmit readings automatically, removing the need for manual checks.

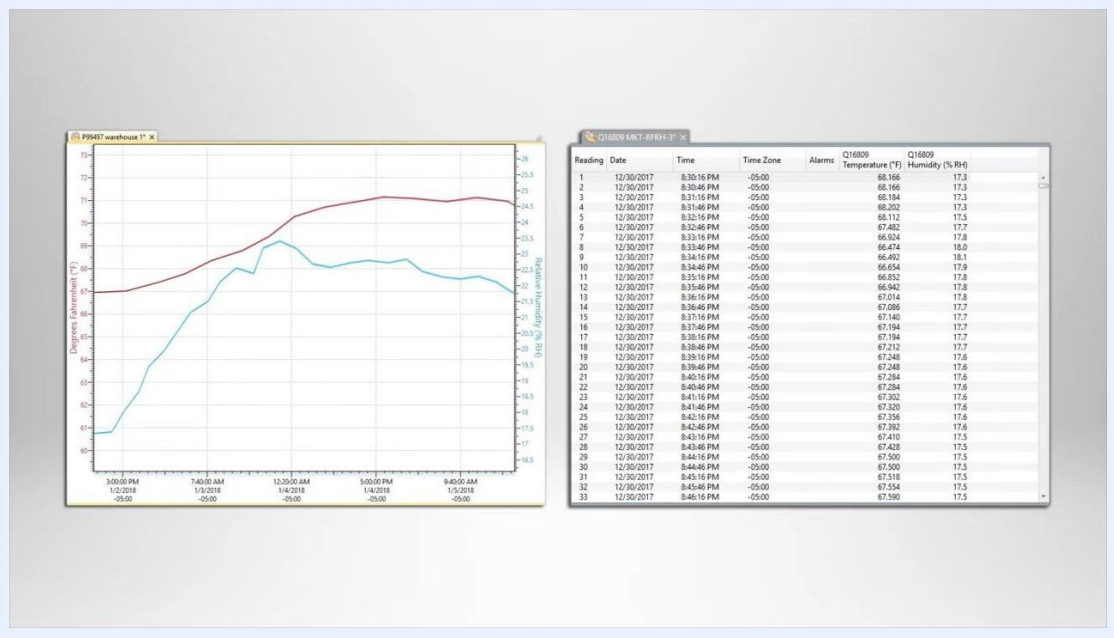
Record location: Monitoring software installed on a dedicated monitoring computer or server.

Wireless loggers can transmit readings directly to monitoring software, which converts incoming data into graphs and organized data tables for quick analysis.

Within that software, you can configure user-defined temperature and humidity thresholds for each environment and enable automatic alerts, including notifications sent to a mobile device, whenever a reading falls outside the safe range. Reviewing minimum, maximum, and average statistics for each channel (for example, Min 3.30, Max 7.04, Avg 4.57) lets you quickly assess the status of every monitored environment. A cloud account also allows you to manage loggers, view real-time data, and review historical records from any internet-enabled device.



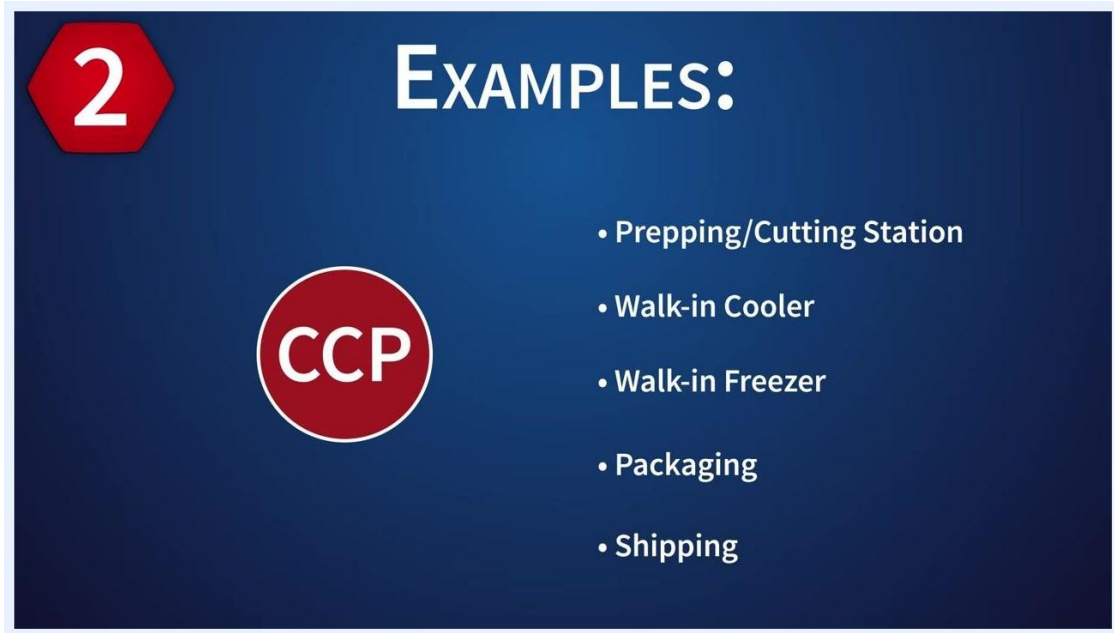
A monitoring protocol checklist with an added facility map and the question "How many loggers of each type?"



A laptop paired with a wireless data logger and two temperature probes, showing on-screen statistics of Min 3.30, Max 7.04, and Avg 4.57

Corrective actions

Your plan must define what happens when a temperature or humidity threshold is exceeded, or when food safety is otherwise compromised. Outline specific corrective actions for each scenario, and prepare an alternative plan (a "Plan B") for situations where the standard procedure fails.

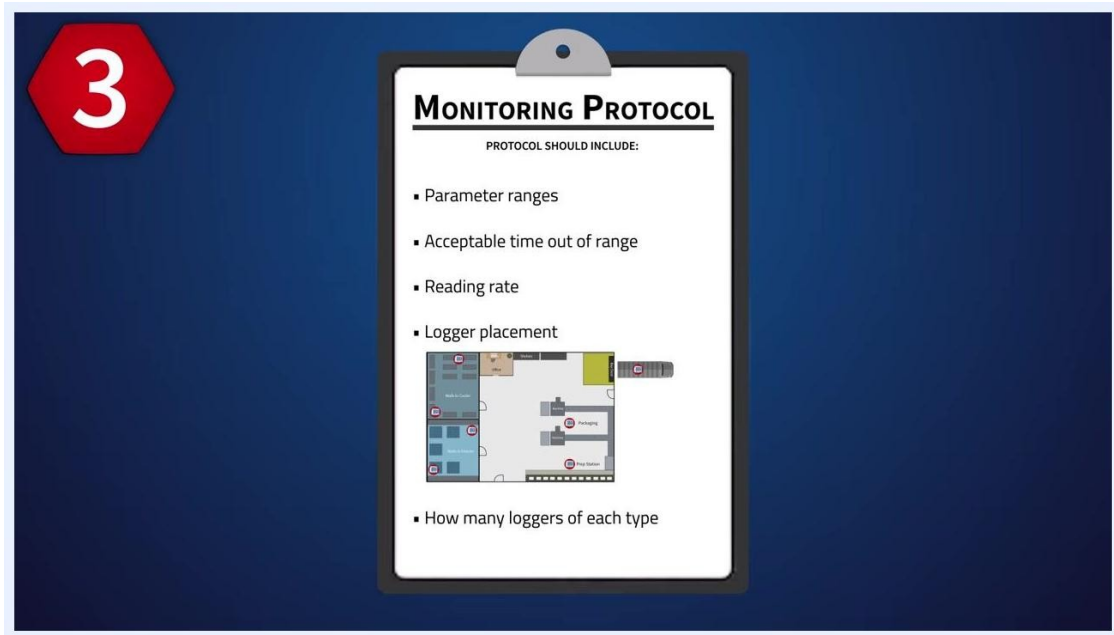


The slide features a dark blue background. In the top left corner, there is a red hexagon with a white number '2'. To its right, the word 'EXAMPLES:' is written in large, white, sans-serif capital letters. In the center-left, there is a red circle with a white border and the letters 'CCP' in white. To the right of the 'CCP' circle, there is a bulleted list of five items in white text:

- Prepping/Cutting Station
- Walk-in Cooler
- Walk-in Freezer
- Packaging
- Shipping

A slide listing example critical control points: Prepping/Cutting Station, Walk-in Cooler, Walk-in Freezer, Packaging, and Shipping

Document product disposition for each corrective action, such as whether affected product is held, discarded, or reprocessed, so staff know exactly how to respond when a limit is missed.



A data logger display beside a cartoon figure discarding "Plan A" and holding "Plan B," representing a corrective actions protocol

Verification

Verification confirms that your monitoring and corrective action procedures are actually working as designed. The source material lists "monitoring and verification procedures" as a required component of HACCP-compliant record-keeping, but does not detail specific supervisor review schedules, calibration steps, audit cadence, or validation activities. When you write this section of your own plan, define who reviews monitoring data, how often equipment is calibrated, how audits are conducted, and how the overall plan is validated for effectiveness.



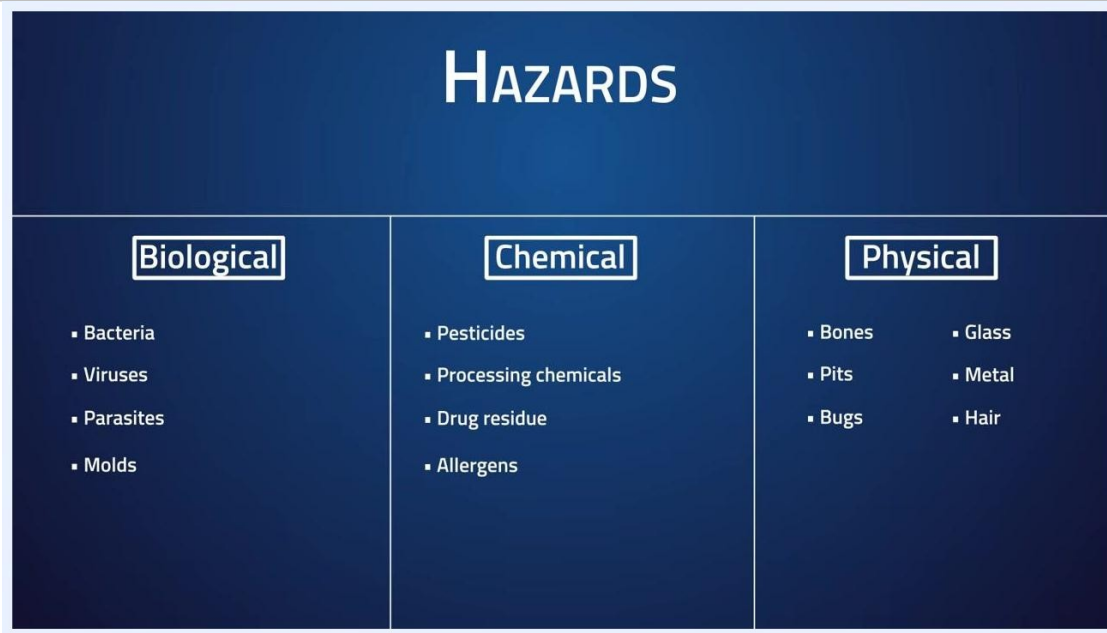
A diagram showing a data logger and the flow from butcher to truck to supermarket, labeled "Monitor every stage"

Records

Comprehensive record-keeping ensures your food safety and data monitoring plans stay properly documented and updated as conditions change. A HACCP-compliant record set should include:

Record	Description
Written HACCP Plan	The complete documented plan
Hazard Analysis	Identified biological, chemical, and physical hazards
Critical Control Points	List of CCPs across the process
Parameter Thresholds	Defined limits for each CCP
Monitoring and Verification Procedures	How checks are performed and confirmed

Record-Keeping Procedures	How records are logged and stored
Flow Charts	Visual map of the process
Corrective Actions Protocol	Steps taken when limits are missed



A blue slide reading "Hazards" with three columns for Biological, Chemical, and Physical hazard categories

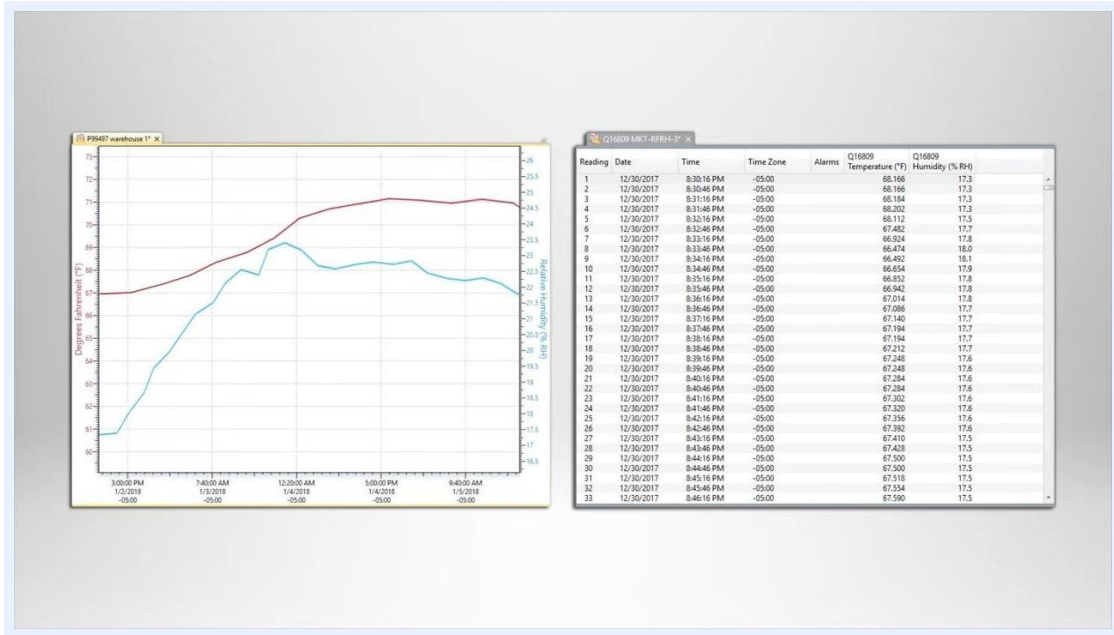
The source material does not specify a retention period or a named accountable owner for these records; your plan should assign a responsible role and a retention period consistent with your regulatory requirements.



A clipboard titled "HACCP Documents" showing the first two required items, HACCP Plan and Hazard Analysis, with space for additional entries

What's next

Once your HACCP plan is written, consider automating the monitoring steps it requires. Wireless data loggers paired with monitoring software can collect readings continuously, generate alerts, and store records without manual intervention, reducing the chance of a missed reading at any CCP.



A laptop screen showing monitoring software with temperature and humidity graphs, data tables, and logger statistics

For further information or technical support on data logging equipment, visit www.madgetech.com or call (603) 456-2011.

You can also review the full range of available data loggers, including options for pressure and shock monitoring, to match equipment to every processing stage in your plan.



A screen displaying MadgeTech support contact details, including the website and phone number, alongside the company logo



A screen showing MadgeTech contact information with a prompt to explore the full line of data loggers, including a highlighted shock-monitoring option