

Food Standards Agency business critical analysis register

An overview of the Food Standards Agency's analytical tools and systems that underpin key decisions and operations.

Overview

This register gives an overview of the Food Standards Agency's (FSA) business critical analysis, including the analytical tools and systems that support our decisions and operations.

It is designed to support transparency, assurance and continuous improvement, following best practice guidance from the [Macpherson Report \(2013\)](#) and the [Aqua Book \(2025\)](#).

The **Macpherson Report** highlighted the importance of robust quality assurance and governance for analytical models used in government, particularly where they inform high-impact decisions. It emphasised the need for clear documentation, accountability and regular review to make sure analysis remains fit for purpose.

The **AQuA Book** builds on this by setting out principles for producing high-quality analysis in government. It stresses the importance of:

- proportionate assurance based on the model's risk and complexity
- transparency in assumptions, methods and limitations
- clear ownership and governance
- ongoing validation and review

In line with these principles, this register identifies analysis that are critical to our strategic and operational functions.

We will update the register regularly to reflect changes in how we use the models, their assurance status and our organisational priorities. It forms part of our commitment to evidence-based decision-making and analytical excellence.

Register of business critical analysis

Probabilistic Radiological Assessments of the Marine Environment (PRAME)

PRAME predicts how radioactive materials can move through marine environments and enter the food chain through pathways including fish and shellfish.

These materials can come from various sources, such as nuclear power plants or medical facilities.

In the event of accidental or routine releases of radioactive materials into the marine environment, FSA carries out modelling in PRAME to inform advice which helps to ensure that

food remains safe.

Probabilistic Implementation of Soils, Plants, Animals Dynamic Evaluation Models (PRISM)

PRISM predicts how radioactive materials can move through farmland and enter the food chain through pathways including soil, plants, and animals.

These materials can come from various sources, such as nuclear power plants or medical facilities.

In the event of accidental or routine releases of radioactive materials onto farmland, FSA carries out modelling in PRISM to inform advice which helps to ensure that food remains safe.

Atmospheric Dispersion Modelling System 6 (ADMS 6)

ADMS is used by FSA to model how radioactive substances released into the air spread and settle onto farmland.

These materials can come from various sources such as nuclear power plants. This model enables any potential risks to public health from atmospheric discharges to be appropriately assessed and managed so that food remains safe.

Assessment for Radiologically Important Update Systems (AQUARIUS)

AQUARIUS predicts how radioactive materials can move through freshwater environments and produce whole-dose assessments from the ingestion of food, as well as non-food pathways, following direct release into freshwater environments.

These materials can come from various sources, such as nuclear power plants or medical facilities.

In the event of accidental or routine releases of radioactive materials into freshwater environments the FSA conducts modelling in AQUARIUS to inform advice which helps to ensure that food remains safe.

Crème Food Safety model

The Crème Food Safety model is used to undertake consumption estimates and exposure assessments for UK consumers.

The outputs of the model are used in food safety risk assessments undertaken by the FSA.

Foodborne disease (FBD) Cost of Illness model

The FBD Cost of Illness model calculates and estimates the cost of foodborne illness based on the number of cases, severity category (presenting to a GP, hospitalisation, not presenting to a GP) and relevant unit prices (medical costs, wages).

Food Hypersensitivity (FHS) Cost of Illness model

The FHS Cost of Illness model estimates the economic and societal burden of food hypersensitivity in the UK associated with food hypersensitivity conditions, including food allergy, food intolerance and coeliac disease.

Activity Based Meat Charging model

Financial model to calculate the indirect charge rate to be applied to industry and government customers for meat-related work.

Hourly Rate Model for Meat Charging

Financial model to calculate the direct charge rates to be applied to industry and government customers for meat-related work.

Discount Model for Meat Charging

Financial model to calculate the apportionment of the discount available to Food Business Operators.

FSA Pay model

Financial model to calculate FSA employee pay.

High Risk Foods not of Animal Origin Risk Categorisation Tool (HRFNAO RCT)

The HRFNAO RCT is used to categorise the human health risks related to food of non-animal origin imported into Great Britain.

The outputs of the RCT support review of the official controls set out in assimilated [Commission Implementing Regulation 1793/2019](#).

Foodborne Disease Estimation Model (FDEM)

The FDEM estimates cases, GP presentations, hospital admissions and deaths for 13 key pathogens. It also estimates an overall foodborne disease figure that includes cases of unknown origin.

Notifiable diseases dashboard

Notifiable diseases are animal diseases where there is a legal obligation to report any outbreaks to the Animal and Plant Health Agency.

The notifiable diseases dashboard identifies the appropriate control zones around an outbreak. This information is used to contact the appropriate establishments and front-line staff.

International Disease Monitoring (IDM) in Food

IDM-Food is a generic scanning model used to categorise the risk of microbiological hazards in imported products of animal origin (POAO) from specific countries.