Introduction
Consumption of safe, wholesome food is one of the fundamental cornerstones of humanity. Consumers, therefore, need to trust the food they are consuming will not cause harm. Consumers lack adequate scientific food safety knowledge to evaluate food risks correctly, thus the food industry need to produce foods that are safe as possible to mitigate this lack of knowledge. However, as risks can never be fully removed, the consumer is still on the front line of defence against foodborne illness1,2,3. Governments, therefore, have a responsibility to fill this knowledge gap by providing advice and guidelines for consumers on adequate domestic food safety practices.

With 44% of the world’s population now having access to the internet4, this is one of the best means to impart knowledge to a vast range of consumers. As a result, domestic food safety advice via government websites (agency websites may be a useful method for advising consumers on food safety advice from international government agencies5-8). Evidence gathered for this study was obtained from international government agency websites.

Purpose
The aim of the research was to identify commonalities and differences between food safety advice from international governments agencies, and assess their suitability and adequacy of food safety advice.

Methods
Data Collection: Evidence gathered for this study was obtained using an inclusion criterion from international Government agency websites (n=46) from countries that appeared high within the world ranking of food safety performance9, and classified by the World Economic Situation and Prospects (WESP) as developed countries10.

Ethical Approval: Approval was obtained from the Health Care and Food, Ethics Panel at Cardiff Metropolitan University, code: 2018.

Content Analysis
A total of 409 food safety practices were recorded from 14 international government agency websites. Data obtained from government agency websites was coded using NVivo version 12.1.11. After duplicates were removed, 117 different food safety practices remained.

Food safety practices appearing less than 3 times from the 14 government agency websites, were excluded from the research. In total, 47 distinctive food safety practices remained.

The “5 C’s” of Food Safety
Food safety practices were classified by the researcher into five themes, which included: cook, clean, cross-contaminate, chill and check.

Cook – for example: ensure raw foods are adequately cooked, to the correct core temperature (above 75°C), for the correct duration of time.

Clean – for example: all food contact surfaces including work surfaces, chopping boards, utensils and hands must be thoroughly washed and sanitised before and after food preparation.

Cross-contaminate – for example: avoid raw foods including raw packaging coming in contact with cooked foods, including all food contact surfaces, utensils and hands.

Chill – for example: keep all perishable foods in the refrigerator at or below 5°C.

Check – for example: check the use by date on perishable foods – do not consume foods past their use by date.

Results

Cook

- Recommended cooking temperatures varied from 83°C (149°F) to 75°C (167°F).
- Mixed meat products such as beef, pork and veal had a recommended core temperature of 71°C (160°F).
- All raw poultry products were recommended to be cooked to a core temperature of 75°C (167°F).
- When government agency website only gave one temperature requirement for cooking, 85% stated the highest recommended temperature (75°C or 167°F).
- The greatest variation in recommended cooking temperatures (63°C – 145°F, 145 – 167°F) varied by cooking method e.g. including pork. Hepatitis E, the leading cause of foodborne illness (63°C), requires a minimum cooking temperature of 70°C to inactivate the virus.

Chill

- The most prevalent food safety practice at preventing cross-contamination was to segregate raw meats/poultry/food waste with produce and ready to eat foods in the refrigerator.

Check

- Terminology changed frequently between Governments with ‘use by’ replaced with ‘sell by’ and even ‘best before’.
- One government agency website stated consumers should ‘always trust and eat dairy products before throwing our the container’ – if the consumer is operating outside the guidelines regardless of the best-before date. (9) Such guidance may encourage food safety malpractices and increase the risk of foodborne illness.

Significance of study
Food safety risks have presented many challenges to governments across the world. Assuming the safety of foods requires sufficient legislation and enforcement to control safe manufacturing and transportation of foods. Recognising the role governments play has therefore been the final responsibility for ensuring food safety. It also requires governments to protect consumers by advising consumers to ensure that once foods have been purchased, safe food practices continue throughout transportation, storage and preparation until final consumption.

This study has highlighted a number of food safety commonalities between government agency websites. However, there was still a wide variety of information presented.

Further in-depth research should be carried out to find out what food safety experts believe are the key domestic food safety practices at preventing foodborne illness, and whether all of the food safety practices shown on government agency websites are appropriate and evidence based.

References