

[Singapore]

## Ensuring Food Safety: An Important Challenge Today<sup>\*1</sup>

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Recently in July 2015, a message regarding Group B Streptococcus (GBS) in raw fish started spreading. The Ministry of Health (MOH), National Environment Agency (NEA), and Agri-Food & Veterinary Authority (AVA) acknowledged the message, and started investigating.

MOH sought help from doctors, asking them to report cases of GBS infection, to help the authorities investigate a possible link between the bacterial infection and consumption of raw fish.

After investigating, GBS bacteria was found in 2 types of fish; Song fish, also known as Asian Bighead Carp; and Toman fish, also known as Snakehead fish.

Foodstall holders were asked to temporarily stop selling raw fish dishes using fish which have been found with traces of GBS bacteria. 238 cases of GBS infections were detected during the first 6 months of 2015, compared with an average of 150 cases per year in the past 4 years.

GBS is a common bacterium found in the human gut and urinary tract of about 15-30% of adults without causing disease. However, GBS may occasionally cause infections of the skin, joints, heart and brain. The bacteria can also be found in fish, but this does not pose an issue if the fish is well cooked before consumption.

A check of the list of circulars, food alerts, forum replies, and press releases on the AVA website provides a “taste” of the global challenge of food safety.

- Circular to Supermarket Retailers (engaging local food processors to carry out re-packing of food and labelling requirements)
- AVA ensures safety of disposable utensils
- Voluntary recall of wine products from South Africa by Distell Limited

- Lifting of Restriction on Imports of Poultry and Poultry Products from Hungary
- Import of Frozen Pork from Malaysia
- Lifting of Restriction on Import of Frozen Pork from AVA-approved Establishments in Poland
- Outbreak of Avian Influenza (AI) in Nebraska, USA
- Outbreak of Highly Pathogenic Avian Influenza (H5N8) in Indiana
- Plastic packaging for food tested for food safety
- Outbreak of Avian Influenza (AI) in North Dakota, USA

How can doctors help? They can alert the food safety authority if they discover trends of multiple cases of food poisoning with similar characteristics. Doctors can also provide opportunistic education on food safety, when patients report related symptoms, e.g. stomach upset. They can also consider creating or supporting campaigns or advocacy efforts [e.g. writing to the press] to lobby government about improving food safety.

In the international arena, the Codex Alimentarius, setup by the Food and Agriculture Organization and World Health Organization, compiles standards, codes of practice, guidelines and recommendations relating to food safety. For example,

- Codex standards on Maximum residue limits (MRLs) for residues of pesticides or veterinary drugs in foods
- Codex codes of practice on hygienic practice, e.g. Hazard Analysis and Critical Control Point (HACCP) food safety management system

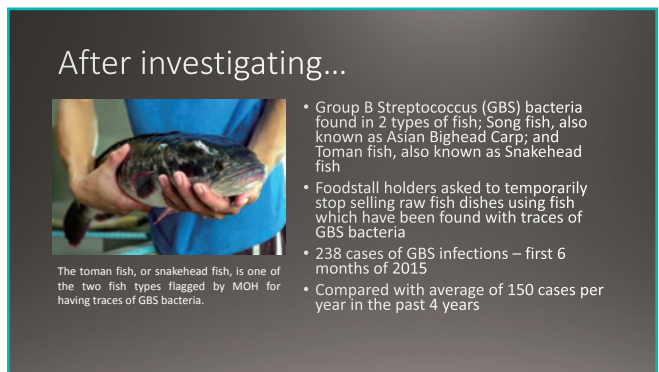
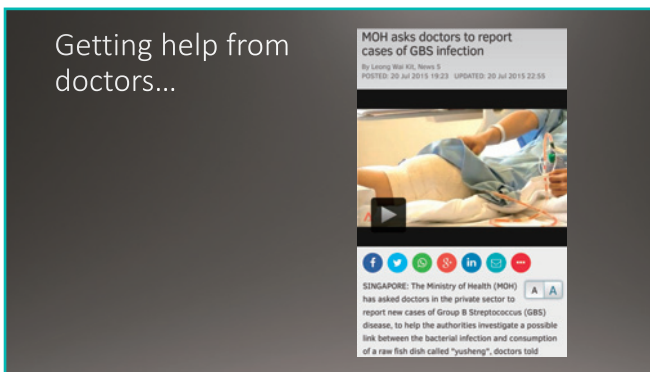
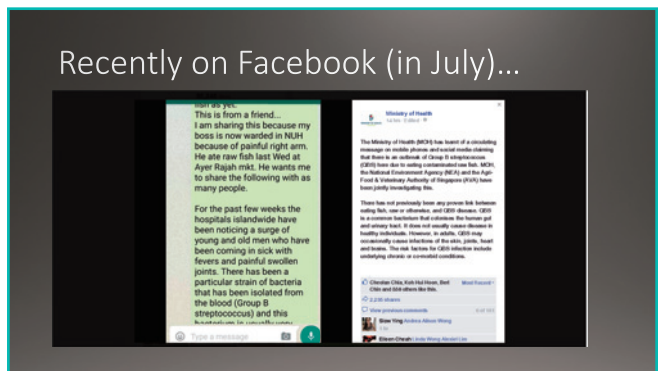
Some of the issues over the horizon include genetically modified food & safety. At the moment, there are no internationally-agreed recommendations on the food labelling of GM

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<sup>\*1</sup> This article is based on a presentation made at the Symposium “Ensuring Food Safety: An Important Challenge Today” held at the 30th CMAAO General Assembly and 51st Council Meeting, Yangon, Myanmar, on September 23-25, 2015.

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foods. Governments are therefore applying their own regulations.



## After investigating (2)...

- GBS is a common bacterium found in the human gut and urinary tract of about 15-30% of adults without causing disease. However, GBS may occasionally cause infections of the skin, joints, heart and brain
- The bacteria can also be found in fish, but this does not pose an issue if the fish is well cooked before consumption
- <http://www.straitstimes.com/singapore/health/gbs-bacteria-found-in-two-types-of-fish-what-you-need-to-know-about-them-0>

## Food Safety in Singapore

- Lead agency
  - Agri-Food & Veterinary Authority of Singapore [under the Ministry of National Development]
- Partners
  - Ministry of Health
  - National Environment Agency [under the Ministry of the Environment & Water Resources]

## A “taste” of the global challenge

Search Result : 18 Record(s) found

- Outbreak of Group B Streptococcus (GBS) in Singapore (2014) (Circular)
- Plastic packaging for food tested for food safety (Circular)
- Outbreak of Arsenic Infection (AI) in North Dakota, USA (Circular)
- Outbreak of Arsenic Infection (AI) in Nebraska, USA (Circular)
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LAST UPDATED ON WEDNESDAY, JUL 16, 2014

List of circulars, food alerts, forum replies, press releases on Agri-Food & Veterinary Authority of Singapore website  
<http://www.ava.gov.sg/newsroom>

## How can doctors help?

- Surveillance
  - alert food safety authority if one discovers trend of multiple cases of food poisoning with similar characteristics
- Education
  - opportunistic education on food safety, when patients report related symptoms, e.g. stomach upset
- Advocacy
  - consider creating/supporting campaigns or advocacy efforts [e.g. writing to the press] to lobby government about improving food safety

## How can doctors (and science) help? (2)

- The case of the raw fish again
- Scientists from A\*STAR's Genome Institute of Singapore (GIS), together with Tan Tock Seng Hospital and the Singapore Infectious Diseases Initiative have sequenced the strain of Group B Streptococcus (GBS) responsible for the increase in severe infections observed in Singapore this year
- With the sequence, the team of scientists are now working to develop new tests for the detection of this bacteria strain
- <http://www.channelnewsasia.com/news/singapore/strain-of-bacteria-linked/2132878.html>



Image: Centers for Disease Control and Prevention. Office of the Associate Director for Communications, Division of Public Health

## How can doctors (and science) help? (3)

- the initial genome sequence will assist in the development of a simpler test that would enable medical professionals to detect the bacteria faster and more cost effectively

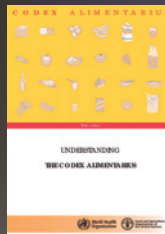
"By having this DNA sequence, now when we see another sick patient, we can be very precise in knowing this is the same strain and part of the same outbreak. If it is coming from the food, we can be very sure that this same strain that caused the infection in the patient is actually the one that's present in the food as well. So this helps overall, in terms of us being able to track what's happening - if it is contamination of food (that caused a patient's illness) or if the outbreak is still ongoing."  
 Dr Swaine Chen

"If a simpler test can be developed, it will contribute to testing patients, food products and surveillance. While we are gratified to see the reduction in cases recently, the GIS sequence can now be studied to look for clues as to why this strain causes serious disease and where it may have come from."  
 Prof Timothy Barkham

## The international arena

- Codex Alimentarius
- setup by Food and Agriculture Organization and World Health Organization
- compiles standards, codes of practice, guidelines and recommendations
- <http://www.codexalimentarius.org>

## Codex Alimentarius



- Examples
  - Codex standards on Maximum residue limits (MRLs) for residues of pesticides or veterinary drugs in foods
  - Codex codes of practice on hygienic practice, e.g. Hazard Analysis and Critical Control Point (HACCP) food safety management system

## Issues over the horizon

- Genetically modified food & safety
- “At the moment, there are no internationally-agreed recommendations on the food labelling of GM foods. Governments are therefore applying their own regulations.”
- <http://www.codexalimentarius.org/faqs/specific-codex-work/en/>