



David Peters

Vice President & Chair - Education Committee



A Practical Biosecurity Audit

August 2nd, 2015





AGRICULTURAL SOCIETIES COUNCIL
OF NSW LTD

LIVESTOCK BIOSECURITY
INFORMATION HANDBOOK

for NSW Country Shows

Written and compiled by John Lee
Director ASC 2015





CONTENTS

1. Forward
2. Introduction
3. Exhibitor Information
4. Emergency Animal Disease Action Plan
5. Cattle
6. Horses
7. Sheep
8. Birds
9. Alpaca, Goats, Pigs and similar Animals
10. Dogs





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Four get E coli at Ekka Show in Brisbane

AAP | AUGUST 23, 2013 5:30PM

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A WOMAN and three children have been infected with E coli bacteria after petting animals at the Ekka show in Brisbane.

The state's chief health officer Dr Jeanette Young says a 33-year-old Brisbane woman and three children, aged six, 11 and 12, are being treated, but are not in hospital.

"They've obtained this infection and we know it is a very serious infection and potentially can cause significant problems," she told reporters.

OPINION 3 OF 4

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The Courier Mail
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Brisbane Ekka E. coli outbreak surges to 19 confirmed cases

JANELLE MILES MEDICAL REPORTER THE COURIER-MAIL AUGUST 30, 2013 1:47PM

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THE Ekka E. coli outbreak has surged to 19 confirmed cases as Biosecurity Queensland continues animal testing to find the source.

Another 17 suspected cases are awaiting the results of tests for [Shiga toxin-producing E. coli](#), or STEC.

[Ekka-goers alerted to E. coli outbreak](#)

Eleven of the confirmed cases are children.

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QUEEN'S





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More cases in Ekka E coli outbreak

This story was published: 2 YEARS AGO | AUGUST 30, 2013 8:47PM

ALMOST 20 people are confirmed to have been infected with the E coli bacteria at the Brisbane Ekka show, but that number could still double.

So far, 19 people have tested positive to Shiga toxin-producing E coli (STEC) in Brisbane.

Of these, 11 are children under 13 and 12 confirmed they attended the Ekka.

A further 17 cases of gastroenteritis are being tested, with the results likely to be received next week.



Almost 20 people are confirmed to have been infected with E coli bacteria at the Brisbane Ekka show. *Source: AAP*



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Ekka E.Coli outbreak spreads

September 3, 2013

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Kim Stephens

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Queensland Health has confirmed 17 more people are being tested for E. coli following an outbreak at the Ekka.

So far, 32 people are confirmed to have been infected with the bacteria, including four who were hospitalised.

The outbreak was tracked to August's annual [Royal Queensland Show's petting zoo](#) after a woman and her three children tested positive.

Communicable Diseases Unit acting senior director Dr Stephen Lambert said anyone displaying symptoms of Shiga toxin-producing E. coli (STEC), including bloody and persistent diarrhoea, should not attend work, school or child care until symptoms cease.

"We are particularly urging parents to take their children to their GP for testing if they display symptoms of STEC," he said.

"If their doctor believes they may have STEC they should not attend child care or school until testing shows they do not have STEC."

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Explainer: what is E.coli?



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More Ekka E. coli cases, 50 now infected

September 9, 2013

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Marissa Calligeros

Online reporter

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Nearly 50 Queenslanders have contracted E. coli in an outbreak linked to the Ekka's petting zoo.

Queensland Health said 49 people, including 31 children aged between one and 15, had contracted the Shiga toxin-producing E. coli (STEC).

A 33-year-old Brisbane woman and three children, aged six, 11 and 12 - all from different families living in different suburbs - were the first to test positive to the potentially deadly bacteria on August 23.

Authorities believe they may have contracted E-coli after patting animals in the animal nursery at Brisbane's Ekka.

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Authorities say more than 100 possible cases of E. coli linked to Brisbane's Ekka

By Jesse Dorsett
Updated 5 Sep 2013, 6:34am

More than 100 people are facing an anxious wait to see if they have contracted the E. coli infection linked to the animal nursery at last month's Brisbane Ekka.

Thirty-two people, including some children, have been infected with a dangerous strain of E. coli.

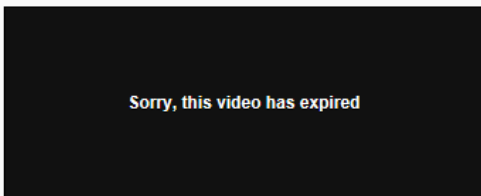
Five have spent some time in hospital.

Another 103 are suffering symptoms from the bacterial infection, including diarrhoea and abdominal pain.

Australian Medical Association (AMA) spokesman Dr Christian Rowan warns people with similar signs.

"There can be significant complications such as hemolytic uremic syndrome, which is a form of the kidneys not working properly," he said.

"Hopefully it's peaked now but you just won't know unless people come forward."



VIDEO: Health alerts issued for south-east Qld (7pm TV News QLD)

PHOTO: Another 103 are suffering symptoms from the E. coli bacterial infection, including diarrhoea and abdominal pain. (AFP: Christian Charisius - file photo)

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Public Health Significance and Occurrence

Most Shiga toxin producing *E. coli* cases notified in Australia are sporadic infections. Infected individuals usually present with bloody diarrhoea and some may experience kidney failure due to HUS. HUS may occur in 5-10% of individuals during EHEC outbreaks and is more likely to occur among children or the elderly (3). HUS carries a 12% risk of death or end stage renal disease with 25% of survivors suffering long-term renal consequences (4). Therefore, considerable effort is made by public health authorities to investigate and control the spread of STEC infection. In Australia between 2000 and 2010 there were an average of 15 cases of HUS (range 3 to 31) notified annually to NNDS. In Queensland, an average of two HUS cases (range 0 to 3) were notified annually over the same time period. There were six community STEC outbreaks reported in Queensland between 2001 and 2013. Two outbreaks were caused through zoonotic transmission (both petting zoos), two outbreaks involved person to person transmission and one outbreak was associated with contaminated tank water. No source or mode of transmission was identified in the other outbreak.

Australia's largest outbreak of STEC infection occurred in Queensland during August 2013 associated with a petting zoo at the RNA (Ekka). There were 57 notified cases of *E. coli* O157:H- infection including 55 primary infections and 2 secondary infections acquired through transmission from a primary case in the same household. The median age of cases was 9 years (65% cases were children). Bloody diarrhoea was reported among 41% cases but there were no reports of HUS. The median incubation period among primary cases was 4 days (range 1 to 11 days).

A case control study covering six Australian jurisdictions over the period 2003-2007 found risk factors for infection to include consuming hamburgers, eating at restaurants, occupational exposure to raw red meat by the case or a member of their household, occupational exposure to animals, consumption of sliced processed chicken meat, consumption of sliced corned beef, bush camping in Australia and eating at catered events (5).

A large outbreak of *E. coli* O111 infection occurred in Australia in 1995 associated with the consumption of contaminated mettwurst (6). Outbreaks have also been associated with environmental exposures including visiting petting zoos and dairy farms.

The most common cause of sporadic infection and outbreaks of *E. coli* O157:H7 in the United States has been the consumption of undercooked minced beef (7). Other documented causes of infection include consumption of contaminated alfalfa sprouts, salads (lettuce, coleslaw), fermented meat, unpasteurised milk, apple cider and drinking water (8).

A large international outbreak of *E. coli* O104:H4, associated with more than 3000 cases of infection and over 800 cases of HUS, occurred predominantly in Germany in May and June 2011 (9). Sprouts grown from fenugreek seeds were implicated as the source of infection on the basis of traceback investigation (10).



What happened at the Ekka



What is E.coli?

Escherichia coli

is the scientific name

uh-sheeruh-keeuh-cole-eye

is how it is pronounced

“Escherichia”

is the family of bacteria and

“coli”

is the species

O157:H7

a number is assigned to identify the type of sub species



What is E.coli? (cont)

- E.coli is a very common bacteria
- It is part of the natural process of digestion
- It is found in the digestive tract of humans and animals, mainly in the small intestine
- The role E. coli plays in digestion is not fully understood, although studies have found it is involved in the process of breaking down vitamins for uptake
- E. coli have evolved over millions of years to suit their hosts, both human and other animals. It is only when they jump hosts that problems arise



Why is E.coli a problem?

- As part of their normal function some species of E.coli produce “*Shiga Toxins*”
- The E.coli outbreak at the 2013 Ekka was Shiga Toxin # 0157:H7 which is highly infectious and can cause serious disease
- In rare cases, the infection can develop into a *haemolytic-uremic syndrome*, which damages the kidneys and can be fatal
- In 1995 an outbreak in Adelaide from contaminated Metwurst sausages resulted in the death of two children from Kidney Failure
- Many animals, mainly Cattle, carry 0157:H7 in their gut without any ill-effect



How Can E.coli get into your gut?

- As seen from the Brisbane Ekka experience the cause was believed to be the *Animal Nursery*
- Grazing animals generally don't emit E.coli through their faeces unless under great stress
- Few things are more stressful for animals than to be handled by a constant stream of adults and children who want to touch them
- The animals in the nursery often lay down in areas where there are faeces from many other species of animals in the enclosure. Hence ending up on their fleece and hair



How can E.coli get into your gut? (cont)

- All it takes is for a person to pat an animal with often invisible faeces on its coat and then to contact food or their mouth. The E.coli can then enter their digestive tract
- An infected person, regardless of age, can leave E.coli on surfaces they touch. Also surfaces that animals touch can be equally contaminated. So not actually touching animals while visiting the animal nursery does not protect you
- E.coli can survive outside the body for long periods of time in a range of conditions and at temperatures between 4 to 53 C



Prevention & Solutions

- **Washing your hands** immediately after contact with animals is the best way to prevent ingesting E.coli bacteria
- It has been estimated as many as 60% of people don't wash their hands after going to a public toilet, so why would anyone wash their hands after visiting an animal nursery?
- Education, signage and providing the facilities for hand washing are keys to a solution, along with having an attendant at the hand washing station to direct human traffic



Education & Signage

- Public address warnings about contact with animals and their faeces plus advising patrons to wash their hands
- Signs at entry points warning about contact. Hand contact only, no contact with the face
- “Hand Washing” signs throughout area where contact with animals is possible
- Produce a simple handout for patrons in an animal contact area.



Assess your situation

- Consider where the shed waste is housed
- Are there collection points that can overflow?
- Will heavy rain affect waste control?
- Is there a plan for waste monitoring and/or removal?
- Can the passageways where patrons walk be better controlled to reduce contact with wet and dry waste?
- Be mindful about the placement of food vendors in relation to housed animals
- For larger shows with ventilation systems, make sure exhausts are directed away from food vendors and public places



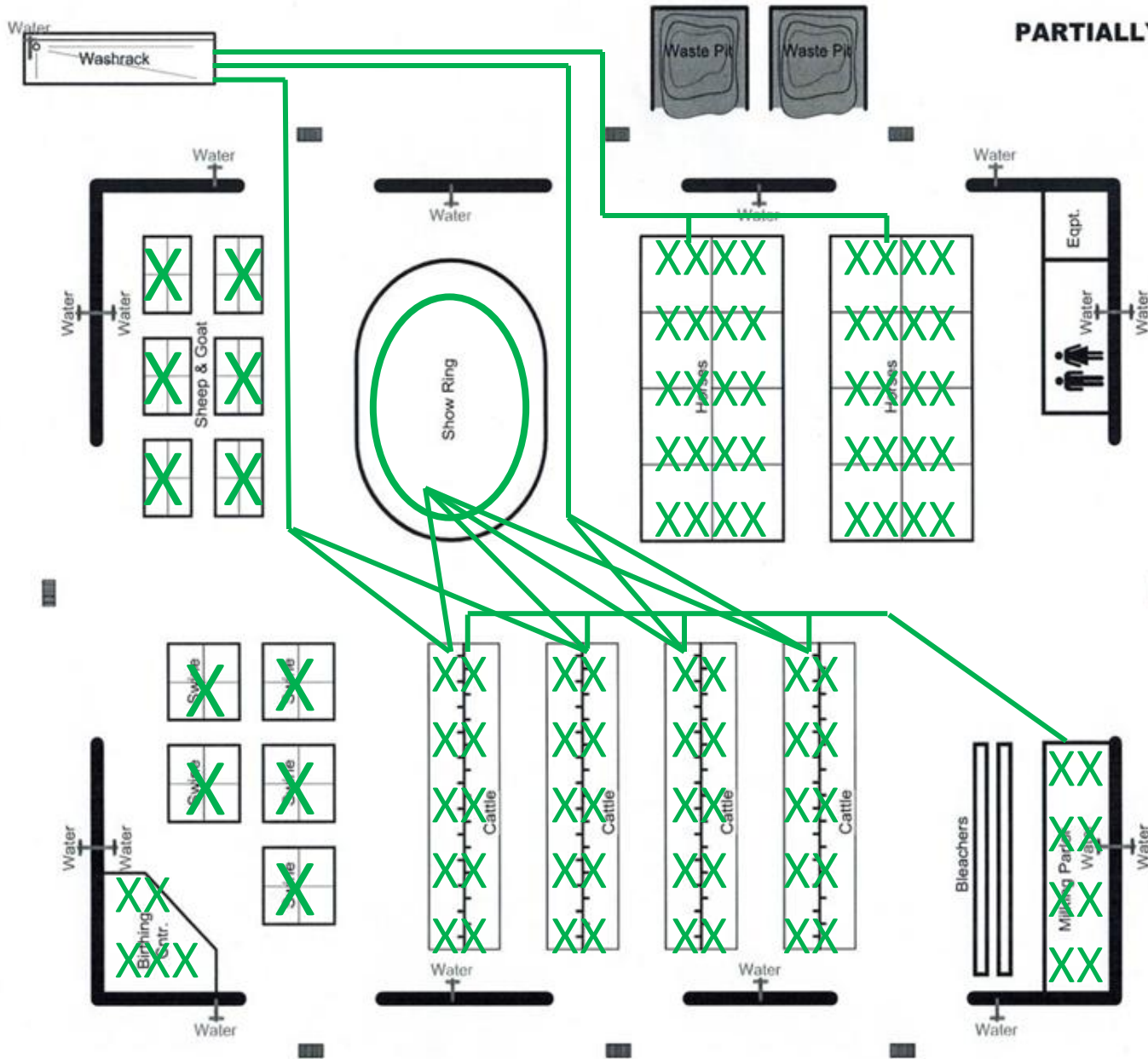
Assess your situation (cont)

- Consider rotating animals in nurseries to reduce stress on the animal from human contact
- Provide hand washing facilities
- Regular animal waste monitoring and removal
- Post-event, ask staff for feedback that may be helpful for future shows and events



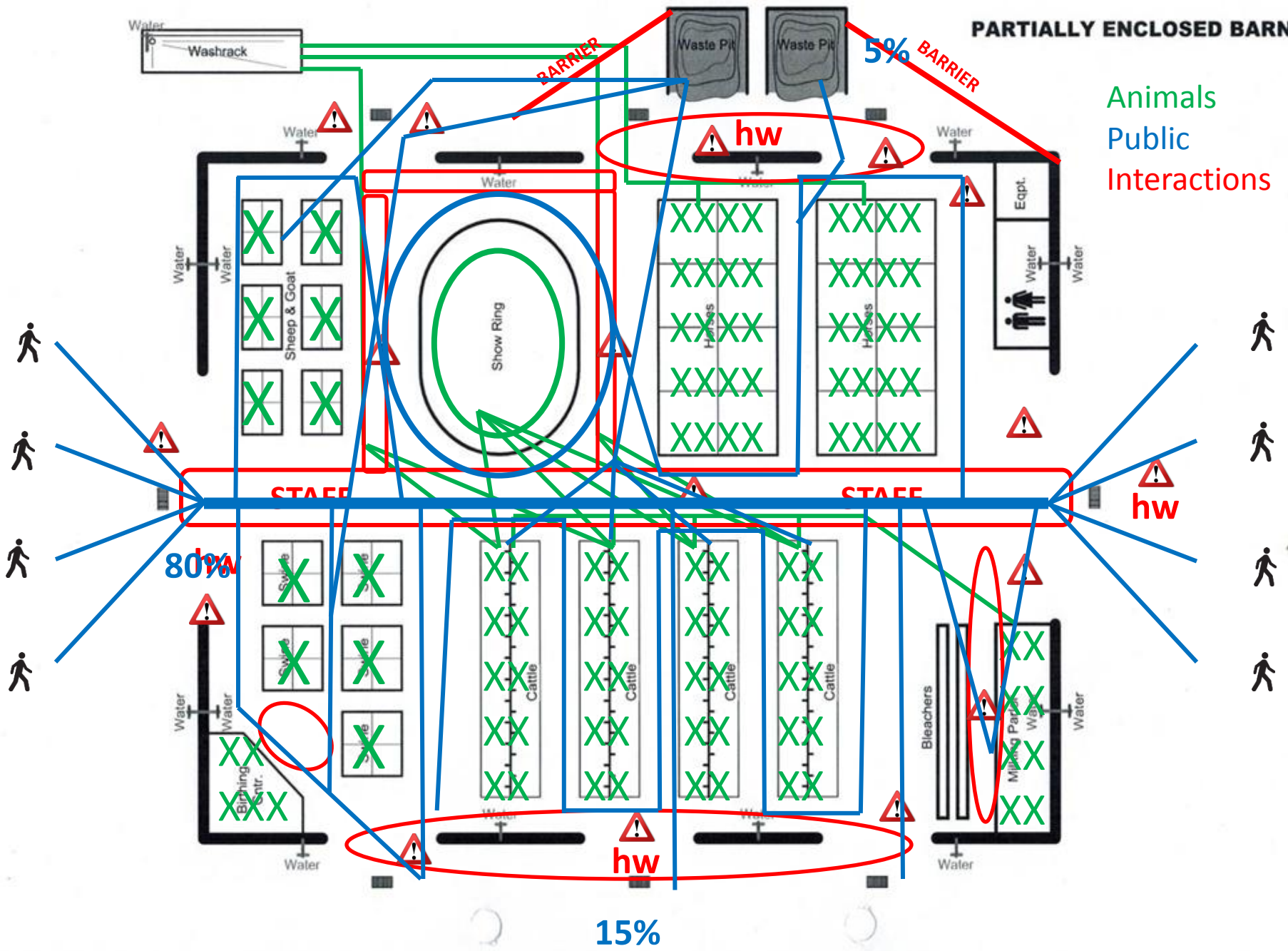
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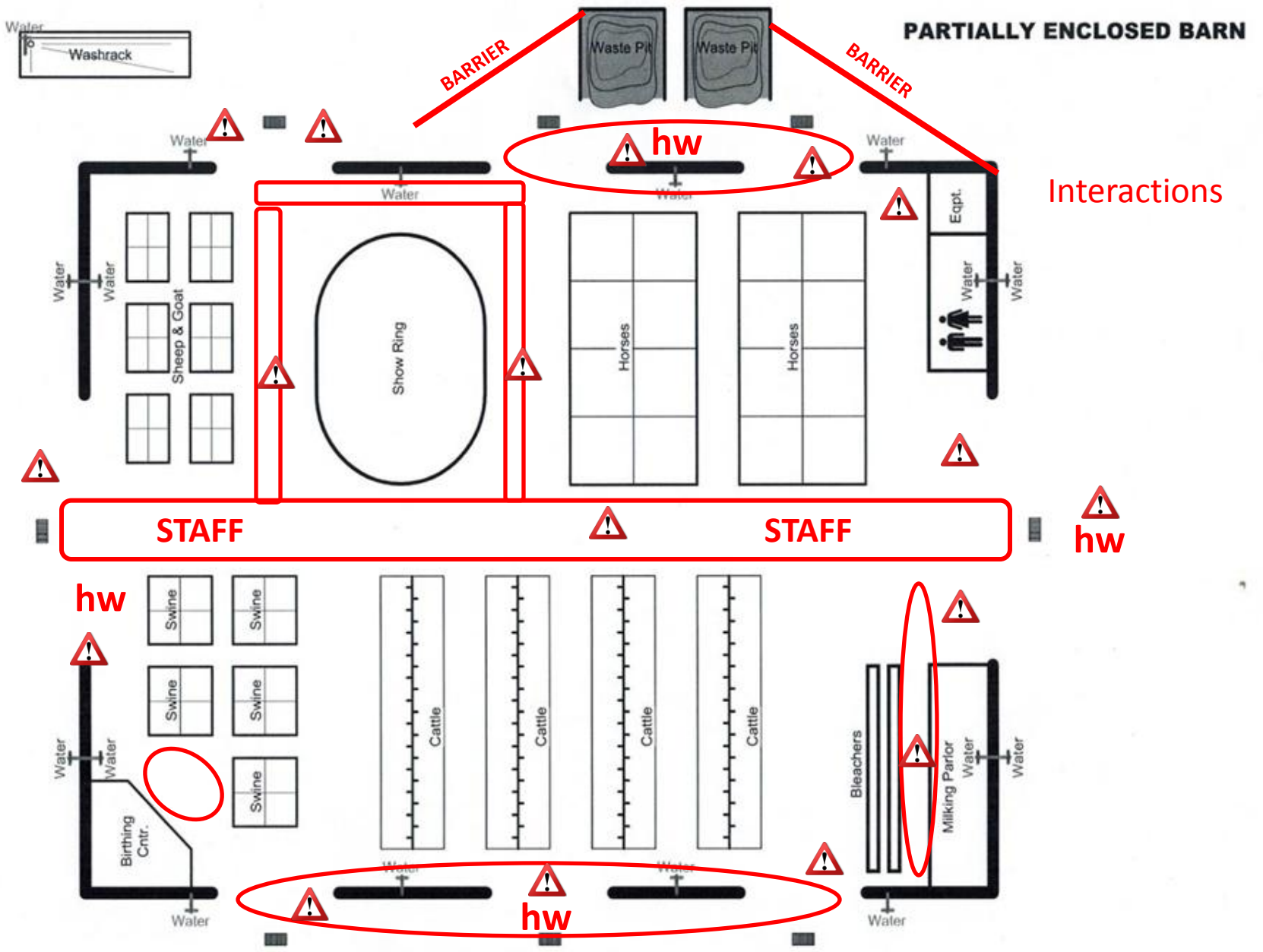
Animals



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Animals
Public
Interactions





IT'S GAME SHOW TIME!!

....AND THERE'S PRIZES!

SO PLEASE CLOSE YOUR WORKBOOK



Question 1:

Correctly pronounce: *Escherichia coli*



Question 2:

The 1995 outbreak of E.coli in Adelaide was due to which contaminated food?

Answer: Sausages or Metwurst Sausages



Question 3:

Name 3 ways to guard against the spread of E.coli at your show

Answer: Handwashing, signage & education



Question 4:

Outside the body, what is the temperature range E.coli can remain alive at?

Answer: 4 to 53 degrees Celsius



Question 5:

What is the name of the biosecurity document shown earlier in this presentation and on the USB drive

Answer: Livestock Biosecurity Information Handbook





Thank you