Public Health England

The Role of the Port Medical Officer
(in the North East)

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- The role
- How it relates to other roles / bodies
- How it all works in practice!

- **Note**: Parts of this presentation are specific to the North East

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Port Health Authorities

As you know, all ports (sea and air) have a Port Health Authority charged with maintaining:

- Environmental Health
- Animal Health
- Public Health
  - With a particular emphasis on infectious diseases

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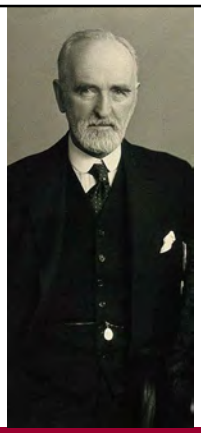

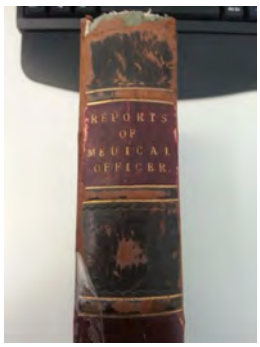

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Port Medical Officer

- An appointed officer of the Port Health Authority
- Usually *(always?)* a medical doctor
- In practice, a Consultant in Health Protection from Public Health England is appointed to this role on an honorary basis – *acting on behalf of the Port Health Authority in this role*

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Port Medical Officer

In the North East – five 'PMOs' for each Port, with one nominated lead per Port. 24/7 response.

Provides expert public health advice on the infectious diseases responsibilities of the port (i.e. protecting the population from cases of severe infectious diseases which come through the Port and controlling outbreaks of infectious illnesses aboard vessels)

Also able to provide advice on public health aspects of other Port Health Authority responsibilities (e.g. zoonoses)

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Why a Consultant in Health Protection?

We **protect** the health of the **population** from **infectious diseases**.

We **prevent harm** when hazards involving **chemicals, poisons or radiation** occur.

We **prepare for new and emerging threats** such as bio-terrorism and virulent new strains of disease.

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PMO in practice…

- Supporting the day-to-day assurance work of the Port Health Authority (e.g. attending Port Health Authority meetings, attending Port Inspections)
- Preparing for incidents involving infectious diseases which might occur (e.g. making and exercising plans)
- Responding when incidents actually occur
- Learning from incidents to reduce the likelihood of recurrence

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Things we don't do…

- Examine individual passengers, make diagnoses, give treatments (though we will help sort this out when required)
- Anything to do with immigration / Border Force issues (though parts of this provided by other bits of PHE)
- Anything to do with ship sanitation certificates etc.
- Anything to do with animals or goods brought in through the Port (with occasional exceptions!)

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Controlling the spread of disease

- Diseases can spread…
- *From person to person on board vessels*
- *From contaminated items on board vessels to people on board vessels*
- *From people on vessels to people on the mainland*

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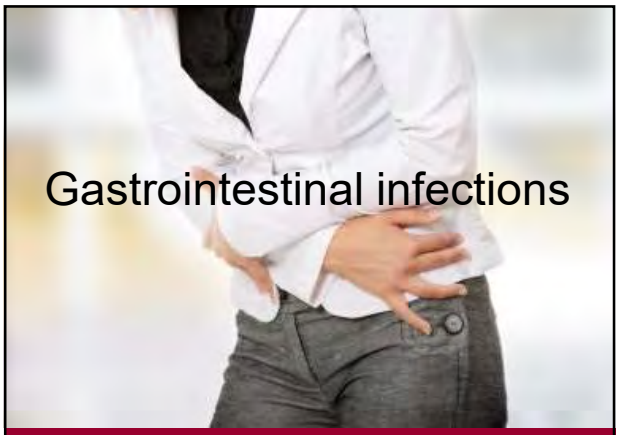

Gastrointestinal infections

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Person to person spread

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Norovirus on cruise ships

- Norovirus is very infectious and common in the general population (especially in winter)
- On land, in the North East alone, we manage around 350 norovirus outbreaks in 'closed settings' such as care homes each year
- Tends not to cause serious illness – but is very unpleasant!

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Norovirus on cruise ships

- Isolation can be difficult on cruise ships
- 'Closing to admissions' is much more costly
- Huge reputational damage
- Faecal sampling to confirm cause can be challenging
- 'Deep cleaning' a cruise ship is difficult with people on board
- Close living quarters (inc for crew)
- Can be difficult to spot first cases

- Cruise lines tend to have robust and rehearsed plans in place to deal with outbreaks
- Surveillance tends to be strong – detailed records of who is ill and where they are
- Legal reporting requirements tend to mean that outbreaks don't often go "under the radar" – at least on cruise ships!
- Food handling on cruise ships generally very good

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Norovirus on cruise ships

- Port Medical Officer can bring experience of dealing with hundreds of outbreaks on land – and apply that to the cruise ship setting (with support!)
- If necessary, PMO can work with Port Health Authority to formally require action from the cruise line

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Person to person spread

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World Health Organization
Europe

MEASLES CASES
in the WHO European Region

2018: 82,596

2017: 25,863

2016: 5,273

Measles

- Very highly infectious
- Current cohort of young adults who are not adequately vaccinated – across Europe
  (North East England better than most places!)
- Infectious before the rash appears – and virus can hang in the air for two hours
- Can be very serious, especially in young / vulnerable people – encephalitis, pneumonia, death
- Only have first MMR vaccine at 12 months

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Measles

- All **suspected** measles cases are reported to PHE (legal requirement on doctors)
- We do a risk assessment, and will arrange testing (either urgently or non-urgently)
- If test is positive and case has been on a flight while infectious…
- …we switch to 'Port Medical Officer' mode and contact *everyone* who has been on the same flight with advice
  (Harder than it sounds!)

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Measles

- This is an example where the Port Medical Officer will take the lead on an incident – often requiring no specific input from other partners in the Port Health Authority

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Controlling the spread of disease

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Legionnaire's Disease

- Example of a disease which could spread from a ship to a person!
- Bacterium which grows in tepid water – causes illness when inhaled
- Most people affected get Pontiac Fever – very mild illness, a lot like the common cold, rarely comes to attention of healthcare services
- Small number will get Legionnaire's pneumonia – which can be fatal

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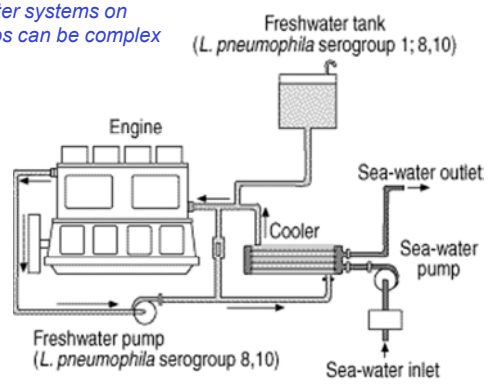
Water systems on ships can be complex



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Legionella on cruise ships

- Can be difficult to find and eradicate it in a complex ship water system
- Not hugely infectious – so can go months (or even years) between cases
- Can be difficult to get solid legal proof that the ship is the cause of the illness
- People can be very sick or even die – particularly older people
- Cruise ships tend to have very robust procedures in place for reducing the risk of Legionella growing in water systems (much like hospitals and hotels)
- Many voluntarily undertake very regular water testing
- Cargo vessels… not always quite as compliant!

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Legionnaire's Disease

- PMO could provide input based on experience of land-based outbreaks – but would need a real multiagency effort to get to the bottom of one of these outbreaks!

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Other examples…

- Foodborne outbreaks
  - *E Coli, Campylobacter, Clostridium perfringens, etc etc*
- Waterborne outbreaks
  - *Cryptosporidium, giardia, campylobacter, etc etc*
- Anything that can cause an outbreak on land can cause an outbreak on a ship!

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Controlling the spread of disease

- Diseases can spread…
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High consequence infectious diseases

- Example where we need to stop illness in people on ships spreading to the local population
- These are things like Viral Haemorrhagic Fevers (such as Ebola) or MERS-CoV
- Likelihood of cases presenting at a seaport (or an airport) is **extremely low**
- Nonetheless – we have plans in place and these are exercised regularly (proportionately to the risk)

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High consequence infectious diseases

- Global surveillance operation for this sort of disease – PHE has a Global Health Unit which works with similar organisations around the world (PMO has links into these people)
- Regularly assesses risk of novel diseases coming into the UK via seaports or airports
- Ports are linked into Local Resilience Forums where this sort of intelligence can be shared and appropriate plans refined

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What's going on at the moment?

- **Ebola in DRC** – 608 cases in 4 months. Over 50,000 people now vaccinated. Attacks on health facilities have led Oxfam and IRC to withdraw from some areas. Risk to UK remains very low.
- **Measles in Madagascar** – More than 16,000 cases in 6 weeks. Serious problems with under vaccination – less than 75% of population is vaccinated. Possibility of imported cases to UK.

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What's going on at the moment?

- **Avian influenza (H9N2) in China** – 6 human cases in last 12 months. Very low risk to the UK.
- **Marburg virus in Sierra Leone** – Detected in a species of bat where it hasn't previously been found (Egyptian rousette fruit bats) – work ongoing to assess significance (i.e. is this 'new' or just previously undetected?)
- **Drug resistant typhoid fever in Pakistan** – Slow burning outbreak since 2016 – about 5000 cases reported. Possibility of wider spread.

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What's going on at the moment?

- ***Lonepinella koalarum*-like infections in Australia** – 3 cases of minor infections with a newly discovered bacterium, appears to have been tracked back to the gums of koala bears.

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Preventing imported cases

- Vaccinations for travellers where relevant
- Advice to travellers – areas / countries / activities to avoid
- Practical interventions – e.g. disinsection of aircraft
- In some cases (e.g. TB) – screening of people wishing to move to the UK before visas are issued

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Zoonoses

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Zoonoses

- Port Medical Officer can provide advice on the human consequences of animal disease being imported to the UK
- Many Ports involved in mosquito surveillance – ensuring that any disease-carrying species in the UK are detected and eradicated
  (Less of an issue in the North East because our climate is incompatible with sustained life – but becoming a problem in the South)

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Zoonoses – not just small animals!

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Zoonoses – not just small animals!

- Health Protection Teams regularly arrange treatment for people exposed to rabies – either via bats in the UK, or via exposures abroad
- If, for example, undocumented animal with rabies was to escape Port, PMO would have a large role in dealing with humans who were exposed
- Recently exercised in the North East

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Big bangs and major incidents

Major incidents

- Port Health Authorities are 'Category One' responders under the Civil Contingencies Act 2004…
- …and so is Public Health England
- Most major incidents at Ports won't involve the Port Medical Officer – but some will, and it won't always be obvious up front!

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Major incidents

- Exercises involving CBRN attacks on Ports – large role for PMO in advising on decontamination of affected people
- Recent exercise at Newcastle Airport – plane carrying chlorine pellets crashed – would burning chlorine pellets release gas that might affect the local population?
- Following Manchester Bombing, considerable role for health protection in advising on vaccinations for those affected (could be PMO role in Port-based incident)

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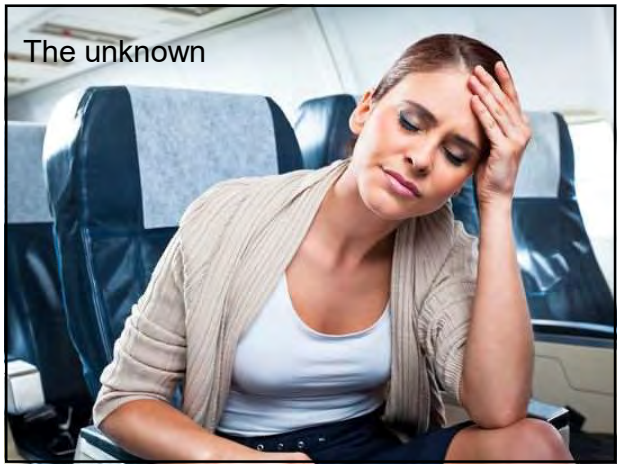
The unknown



The unknown

- Group of people on a vessel become unwell – cause unknown
- Is it safe for them to disembark?
- What is the underlying cause?
- How can we arrange urgent treatment?
- Port Medical Officer can help with all of this – Port Health Plans in place for these scenarios

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"What do we do now?"

- Recent incident of chicken pox on a flight at Newcastle Airport
- We can provide rapid advice / reassurance – just a phone call away.

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The weird, wonderful and unexpected!

Illness on a cargo vessel – July 2014

- Captain contacted Harbour Master prior on approach to Port of Tyne to report that 16 of 21 crew on a cargo ship had become unwell with nausea, vomiting, diarrhoea, headaches and hallucinations
- Port Medical Officer worked with Harbour Master to pin down what might be going on – turned out that the symptoms had started three weeks ago after the crew had eaten barracuda fish that they had caught.

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Illness on a cargo vessel

- Incident Control meeting convened by PHE the same day, involving Port Health Authority, Port Services, South Tyneside Foundation Trust and national experts on poisoning from barracuda fish.

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Ciguatera poisoning

- This is a foodborne illness caused by eating tropical fish whose flesh is contaminated with ciguatoxin.
- Ciguatoxin is produced by a kind of plankton that can live in the flesh of certain fish.
- Cooking does not remove the toxin.
- Among other things… causes nausea, vomiting, diarrhoea, headaches, muscle aches, numbness of extremities, hallucinations.

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The response

- Port Medical Officer worked with the local hospital Trust to arrange for crew to be transported by taxi to A&E for assessment in 'waves' (according to how ill they were) – all put in place while the ship was still coming in to prevent any delays (and to make sure appropriate Border Force arrangements were in place for crew to come ashore)
- PHE/PMO arranged for national experts to give advice to clinicians on assessment and treatment of cases… ciguatera poisoning isn't common in South Tyneside!
- PHE/PMO ensured that an appropriate media handling plan was in place, and that appropriate partners were briefed – such as the local Director of Public Health in the Local Authority.

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The response

- Port Health Officers boarded to inspect the ship – ensured no fish retained on board and that appropriate cleaning was undertaken (including disposing of wooden chopping boards)
- Crew did not need admission – returned to ship
- Port Services liaised with the local hospital Trust re invoicing for hospital treatment for crew
- PMO/PHE shared the learning from the incident internationally in an effort to reduce the likelihood of future poisoning incidents

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- The Port Medical Officers, through our health protection team, work closely with partner organisations to make sure that the health of the local population is protected.
- There can be more to the role than first meets the eye!

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