Novel tools to train and test HNS response preparedness

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Public Health England. Who we are?

PHE is part of the UK Department of Health leading on the protection and promotion of public health.

Public Health England

The Centre for Radiation, Chemical and Environmental Hazards (CRCE) provides advice on human health effects from chemicals and radiation in the environment.

CRCE is a Category 1 Responder to chemical incidents. This means we work closely with the emergency services.

CRCE Wales is based in Cardiff and provides advice to Wales and Ireland. Also acts as a WHO Coordination Centre for chemical incidents worldwide.

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Task 5: Tools for Training and Exercise

- Objective - To enhance resilience to maritime incidents and cross border threats via training and exercise.

- PHE specifically proposed development and piloting of 2 innovative bespoke resources for the Atlantic Area

  - On-line maritime exercise generation tool

  - E-learning package for application of International Health Regulations to cross border maritime incidents.

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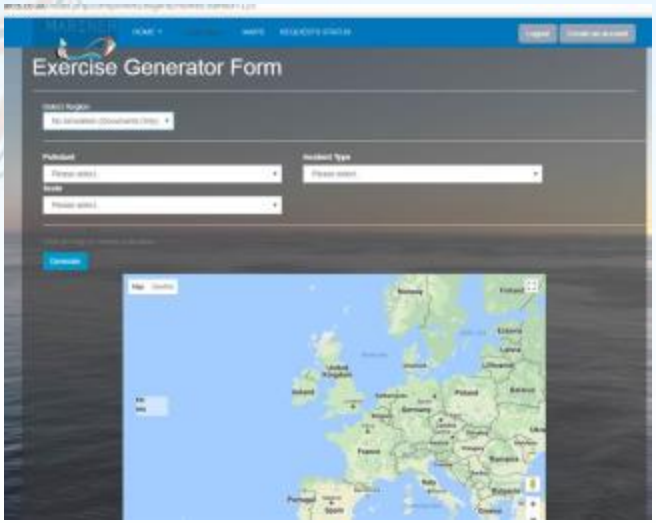
Exercise Generation Tool

On-line tool able to incorporate local and regional data and rapidly produce bespoke scenarios to test local and regional response plans .



Key Benefits

- Adaptable to multiple EU Atlantic regions.
- Applicable to a range of HNS types and incident sizes.
- Incorporating seasonal variability.
- Provision to test cross border responses.

Development Process

- Conceptual design in collaboration with Action Modulers and Cardiff Metropolitan University.
- Pilot testing with UK regional response groups

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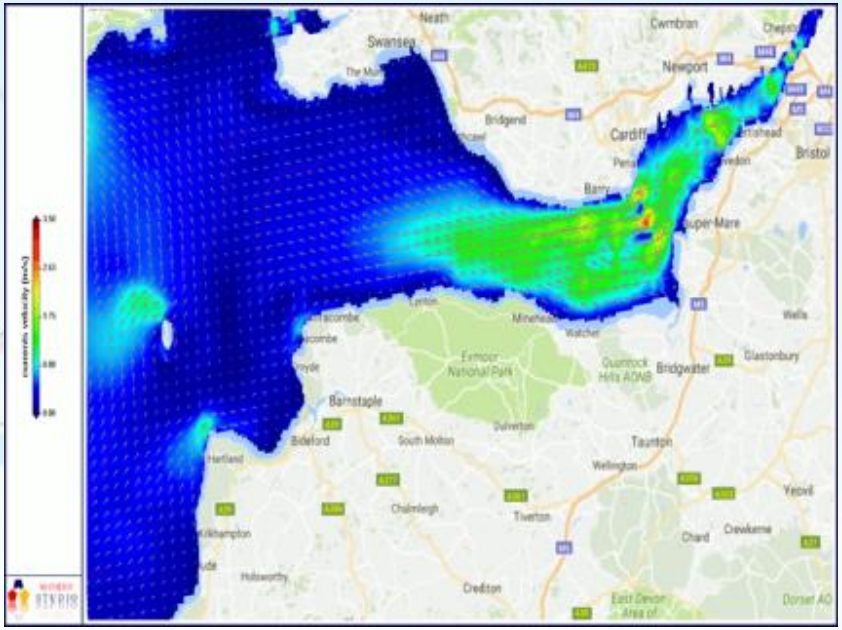
Pilot Study: Bristol Channel UK

A large tidal estuary separating South Wales and South West England.

Piloting comprised a 3- stage process

1. Fill the database with regional data (2016)
2. Beta testing for functionality (2016/17)
3. Live trial with regional responders (Cardiff Workshop July 2017).



Results

- All Stages complete.
- Feedback reviewed
- Finalised version available by end of 2017 via Mariner website

Live Demonstration After Lunch

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E-learning – International Health Regulations (IHR)

The aim is:

"To develop understanding of the key elements of IHR with particular relevance to the risk assessment of cross border maritime events thereby increasing the protection of public health and the environment."

Three short e-learning modules are being developed.

- Module 1 – Introduction to IHR
- Module 2 – Applying IHR risk assessment criteria to maritime events
- Module 3 – Interactive case study

Will link to other training materials being developed on IHR for the WHO

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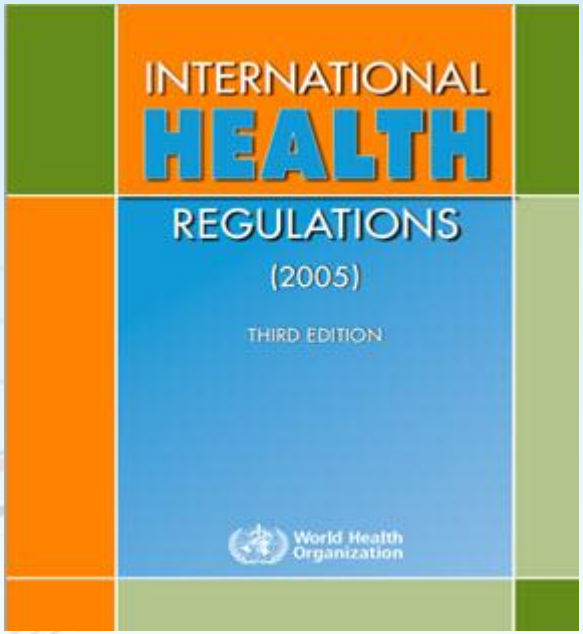
What are the International Health Regulations?

The revised International Health Regulations 2005 (IHR 2005) are a **legally-binding agreement** providing a unique public health framework in form of obligations and recommendations.



The stated purposes is:

"to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade."

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History and the current remit of IHR?

- Developed to address the issue of global health (i.e. a health threat in one country can affect other areas)
- First introduced in 1969 to monitor and control for 6 infectious diseases (cholera, plague, yellow fever, relapsing fever and typhus).
- Revised in 2005 following the severe acute respiratory syndrome (SARS) epidemic and now cover an ALL HAZARDS approach.
- States are required to notify a potentially wide range of events to WHO that may constitute a public health emergency of international concern.
- WHO plays the coordinating role in IHR and, together with its partners, helps countries to build capacities.

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From infectious diseases to all hazards…

The All Hazards Approach

Chemical

Health and environment

Emergencies

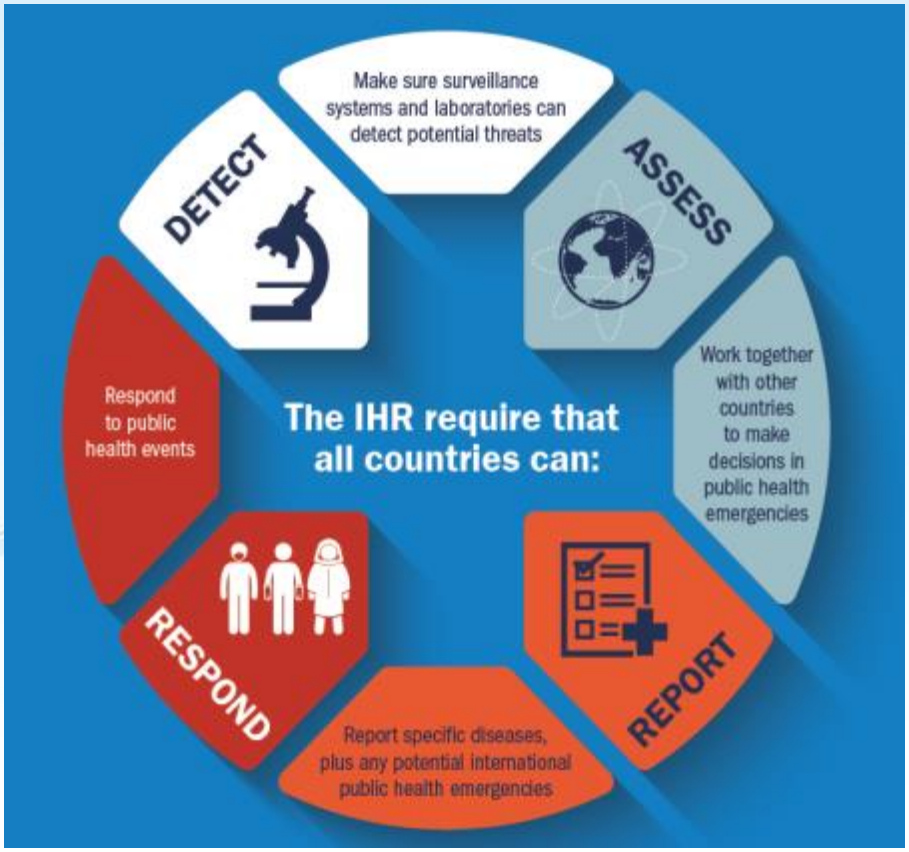
Radiation Emergencies

Water and sanitation

Infectious disease

Zoonotic events

Food safety



Source: CDC (Centers for Disease Control and Prevention

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Public Health Emergency of International Concern (PHEIC)

Is defined in the Regulations as an extraordinary public health event which constitutes a public health risk to other States through the international spread of disease, and may require a coordinated international response.

A PHEIC:

- Must constitute a public health risk to other States through the international spread of disease
- Must potentially require a coordinated international response
- PHEIC can only be declared by the Director-General of WHO.

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Assessing incidents under IHR – the decision instrument

There are four essential and mandatory criteria

I. **Is the public health impact of the event serious? (yes/no)**
II. **Is the event unusual or unexpected? (yes/no)**
III. **Is there any significant risk of international spread? (yes/no)**
IV. **Is there any significant risk of international travel or trade restrictions? (yes/no)**

- IHR National Focal Points are required to notify WHO of any event that meets at least two of the four decision criteria.
- If the event does not meet the notification requirements, NFPs may wish to report the incident to the WHO

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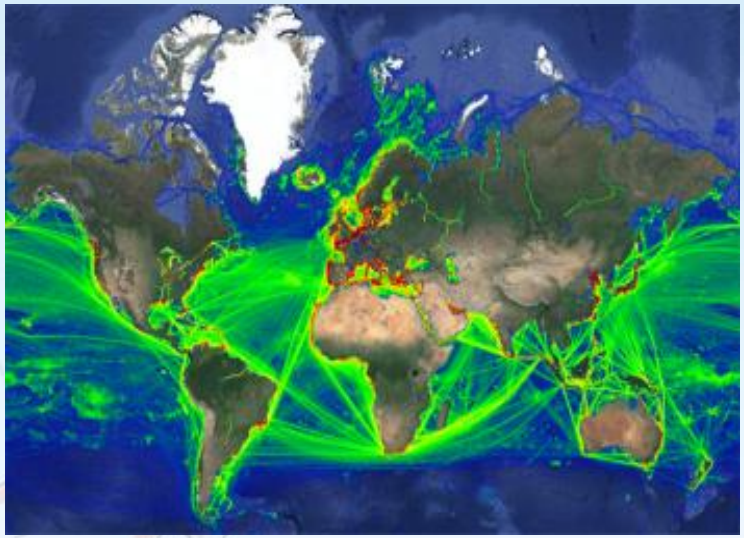
Why would maritime pollution come under IHR?

- Many chemicals are transported by sea.
- Approximately 90% of all European Union external trade is by sea.
- Estimates indicate up to 50,000 hazardous substances carried by sea with 2000+ chemicals carried regularly.
- Annual bulk trade 200+ million tonnes world-wide.
- As these pictures show certain areas have extremely high traffic densities between countries.
- Currents and tides can transport pollution across international boundaries



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Why would a maritime event require assessment under IHR?

I. Is the public health impact serious?

- Spread of toxic or hazardous materials (potentially) contaminating a population or large area? e.g. Oil spill, HNS.
- Large number of cases of ill- health? e.g. airborne release of chemicals from a ship.
- Is there a significant on-going public health risk? e.g. On-going coast contamination and clean-up issues.

II. Is the event unusual or unexpected?

- Is the event unusual for the area? e.g. has it occurred before, is the country able to dial with the event?
- Unusual of unknown source or chemical? e.g. has the chemical been identified?
- More cases of ill health than expected? e.g. reports of ill health putting a strain on the health service?

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Why would a maritime event require assessment under IHR?

III. Is there any significant risk of international spread?

- Potential for cross border spread or movement? e.g. oil or HNS pollution event that is (or can) affect other countries.

IV. Is there any significant risk of international travel or trade restrictions?

- Spread of contamination into commercially important food chains that may be exported? e.g. HNS affecting fisheries, shellfish harvesting?
- Ban on import or export of contaminated food or goods? e.g. fish, shellfish etc.
- Spread of contamination into areas that would require international trade or travel bans? e.g. pollution affecting tourist areas such as beaches

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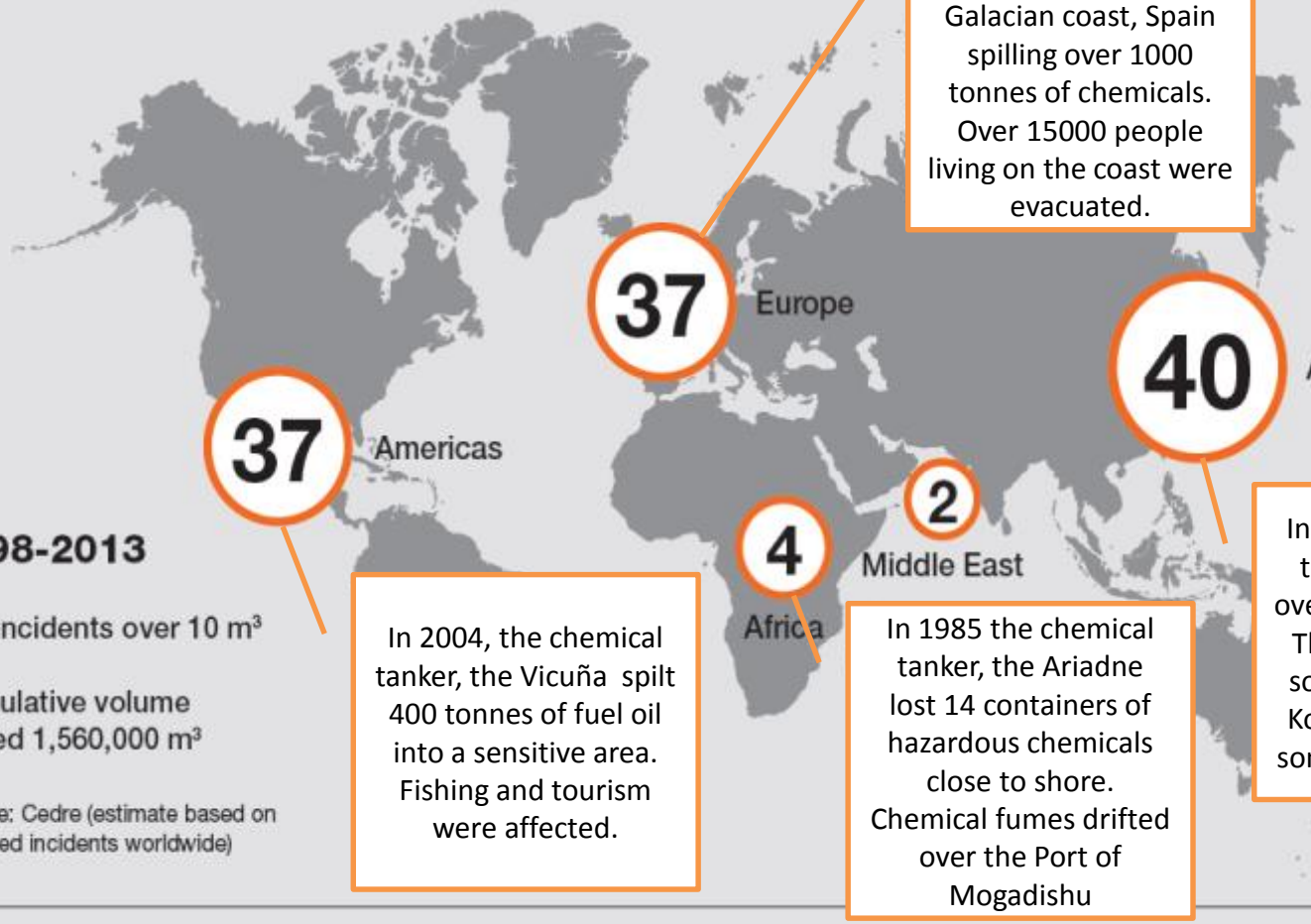
SHIP-SOURCE HNS INCIDENTS



In 1987 the Cason ran aground off the Galacian coast, Spain spilling over 1000 tonnes of chemicals. Over 15000 people living on the coast were evacuated.

In 1995 the oil tanker, the Sea Prince, spilt over 5000 tonnes of oil. The spill affected the southern and Eastern Korean peninsula and some Japanese islands.

In 2004, the chemical tanker, the Vicuña spilt 400 tonnes of fuel oil into a sensitive area. Fishing and tourism were affected.

In 1985 the chemical tanker, the Ariadne lost 14 containers of hazardous chemicals close to shore. Chemical fumes drifted over the Port of Mogadishu

1998-2013

126 incidents over 10 m^3

Cumulative volume spilled 1,560,000 m^3

Source: Cedre (estimate based on reported incidents worldwide)

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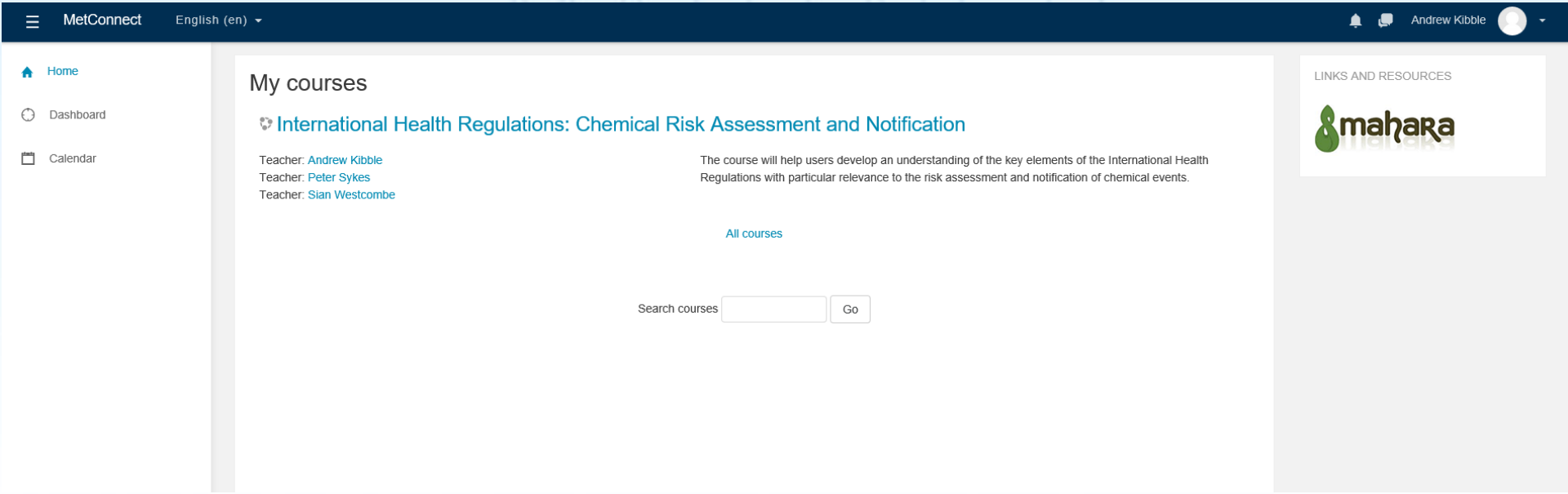
IHR e-learning - screenshot

- E-learning course will be published in December 2017
- Will link to the exercise tool and MARINER webpage
- Free to access although you will need to create an account



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Menu

- Introduction
  - Welcome
  - What are the International Health...
  - Statistics
  - Chemicals at sea
  - HNS
  - Types of Chemicals
  - Types of Chemicals
  - Types of Chemicals
  - Rules and Regulations
  - Martime Incidents
  - Maritime Incidents
  - HNS Incidents
  - Impacts from Pollution

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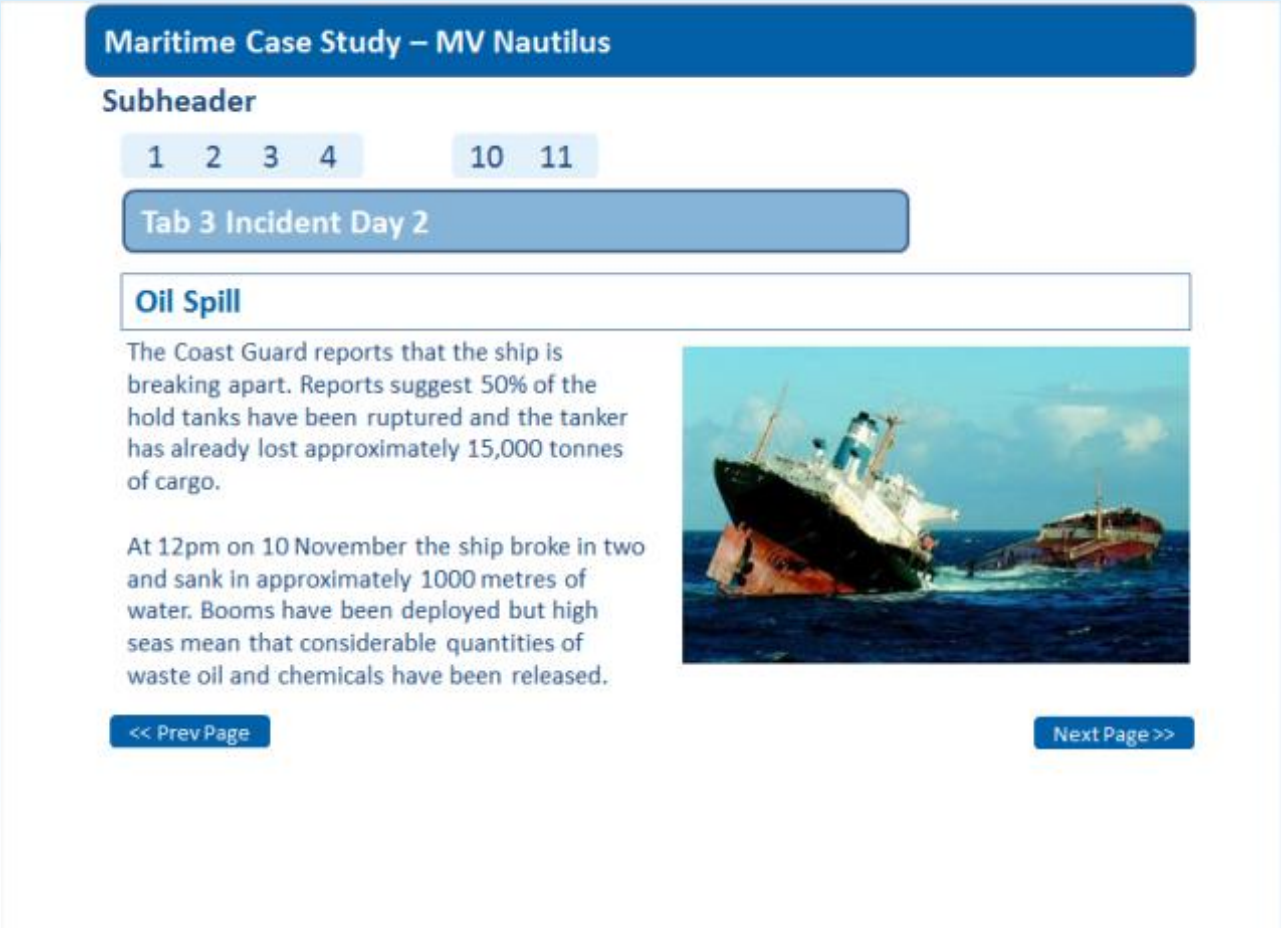
IHR e-learning – interactive case study

E-learning will contain an interactive case study.

Offer an opportunity to apply the IHR risk assessment criteria to a maritime incident.

Case study will be an oil/HNS spill with potential cross border implications.



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Summary

- Developed an software tool capable to generating desktop exercises for a range of maritime pollution events

demonstration this afternoon

- E-learning course examining cross border impacts of maritime pollution and how they may need to be considered under IHR
- IHR are a legally-binding agreement that seeks to manage serious public health threats with potential to spread beyond a country's border to other parts of the world.
- They cover all hazards including maritime events
- The e-learning materials will provide users with an opportunity to understand the background, purpose and scope of IHR and how they can apply to maritime events.
- Both products will be freely available via the MARINER website

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Thank You

Diolch yn Fawr

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