

Guidelines for Public Health Response to Chemical and Other Environmental Incidents

Section A: Public Health Risk Assessment and Initial Response

Public Health Medicine & Environmental Health Group

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Version 4.0

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1. An Environmental Incident with a Potential Risk to Human Health

1.1. Public Health Objective

- Prevent or limit impact on human health
- Mostly met through working with those involved in incident response
- Local Authority is generally the lead agency in managing the response

1.2. Role of Public Health in an Environmental Incident

MOH, where appropriate, will:	MOH is not:
Work with responsible agencies Conduct a Public Health Risk Assessment Provide Public Health advice	Responsible for managing an environmental incident
Need early involvement	A first responder
Access expert toxicological advice	A toxicologist
Access patient management advice	An expert in acute patient management
Access occupational health advice	An expert in occupational health or protective equipment

1.3. Collaboration with Other Agencies

- The Public Health objective is achieved through working with other agencies and HSE colleagues involved in the incident response.
- In an environmental incident, the Local Authority is generally the lead agency. Other agencies (e.g. Irish Water, EPA, An Garda Síochána, HSE) may play a significant role.
- In a major emergency, an inter-agency Local Co-ordination Group may be set up by the Lead Agency under the Major Emergency Management framework.
- In the non-major emergency situation, the process of information sharing between the relevant agencies is less well prescribed. However, the principles of the Major Emergency Management framework can be adopted in a non-major emergency situation. If an inter-agency group has not been formed, the MOH should request that the Lead Agency establish such a group to facilitate information sharing, collaborative working and informed decision making.
- The HSE may also establish a Crisis Management Team – a strategic level management group – to co-ordinate the HSE’s overall response to the incident.
- Depending on the scale and nature of the incident, the MOH may activate an internal departmental incident management team.

1.4. Process of Public Health Risk Assessment (see section 2)

- A public health risk assessment is a dated, timed, signed, context specific and dynamic intervention.
 - Required to ensure appropriateness of actions and advice
- Mnemonic PAR(RC)₂**

- Identify the **P**opulation exposed or expected to be exposed
- **A**ssess the risk
- Consider actions to-date and **R**ecommend further actions to protect the health of the population
- **R**isk **C**ommunication to:
 - other professionals (e.g. local authority, health professionals etc.)
 - the public

1.5. Information Requirements for a Public Health Risk Assessment

- All pertinent and available information is required to feed into a PHRA
- The Public Health Management Incident and Risk Assessment Record available on this webpage should be used to record the PHRA.
- Where information is not available, the PHRA is preliminary and may change
- When a PHRA is indicated, the MOH requires a forum for information exchange and decision-making
- If such a group has not convened by the lead agency, it may be necessary for the MOH to request that the lead agency do so
- Depending on the incident, such a group may meet virtually or face-to-face. The frequency of meetings will be determined by the incident.
- Information to inform the PHRA should be gathered in a systematic way.
- The information management system used by the [MEM framework](#) should be used in all major Public Health incidents. All discussions held (including phone and email), decisions made, and actions taken should be recorded. This documentation should also include reasons why certain actions were not taken/were inappropriate as well as why actions were taken/were appropriate.

1.6. Public Health Advice based on a PHRA

- Public Health advice may be provided to a range of stakeholders including:
 - Lead agency with responsibility for the incident (usually the local authority)
 - Inter-agency Local Co-ordination Group
 - General public and vulnerable subgroups (may be issued as part of an inter-agency communication)
 - HSE colleagues and other healthcare providers (e.g. Environmental Health, GPs, hospitals, CHOs)
- Input with respect to closure of schools and crèches or the cancellation of sporting activities or shelter or evacuation may be necessary
- The PHRA is typically dynamic and Public Health advice may change as the result of emerging information and on-going inter-agency collaboration

1.7. Legislation

The main legal roles and responsibilities of the MOH are described in MOH legislation.

In relation to environmental incidents, the Health (Duties of Officers) Order 1949 is relevant.

MOH Legislation: Health (Duties of Officers) Order 1949:

.. inform ourselves “as respects all influences affecting or threatening to affect injuriously the public health in the country and as respects the causes, origin and distribution of diseases in the county”

And

“advise the county council generally in relation to the health of the people”

Other relevant legislation may apply such as the Drinking Water Regulations or the Seveso Regulations.¹² Where the HSE is a prescribed body in environment and health legislation, the MOH may be the appropriate health officer to fulfil HSE obligations.

If the incident relates to an infectious disease, the much more substantial responsibilities and authority of the MOH under Infectious Diseases Regulations, 1981 as amended, become relevant.³

Under the General Data Protection Regulation (GDPR) 2018, Article 9 2(i), Public Health can access identifiable data relevant to all hazards without consent in the public interest for public health, under our MOH legislation.

We also may need to consider Decision no. 1082/2013/EU on cross border threats to health which produced rules on epidemiological surveillance, monitoring, early warning of and combating serious cross-border threats to health, including preparedness and response planning related to these activities, in order to coordinate and complement national policies.

For more information on MOH legislation and links to the statutory instruments see:

<https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/moh/moh.html>

Note that if the event is a Public Health Emergency of International Concern, the WHO International Health regulations apply.⁴

¹ European Union (Drinking Water) Regulations 2014 (S. I. No. 122 of 2014). The Stationery Office: Dublin. Available online at <http://www.irishstatutebook.ie/eli/2014/si/122/made/en/print>

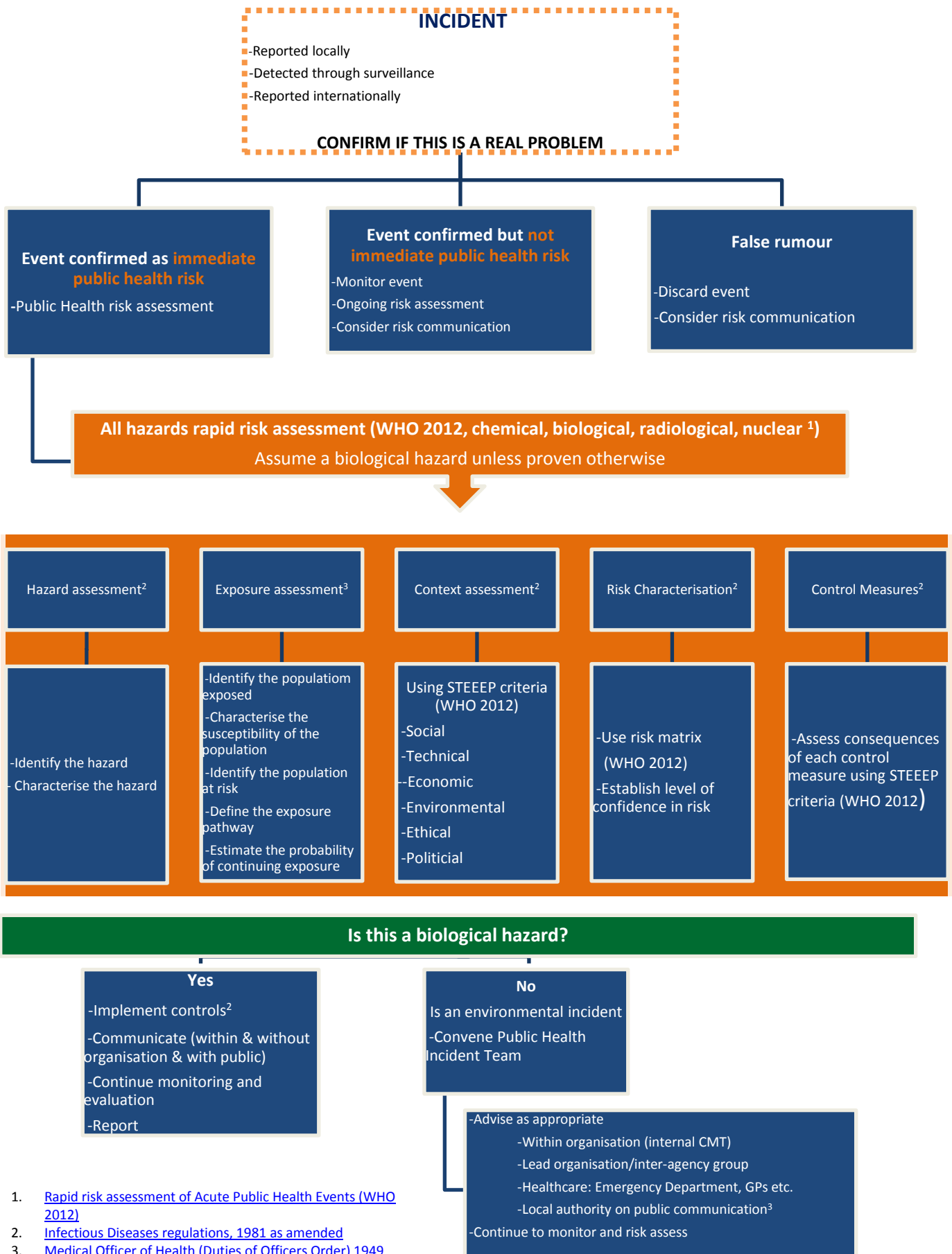
² Chemicals Act (Control of Major Accident Hazards involving Dangerous Substances) Regulations 2015 (S.I. No. 209 of 2015)

³ Infectious Disease Regulations, 1981 (S.I. No 390 of 1981). The Stationery Office: Dublin. Available online <http://www.irishstatutebook.ie/eli/1981/si/390/made/en/print>

⁴ World Health Organization. International Health Regulations (2005). Available online at http://www.who.int/topics/international_health_regulations/en/

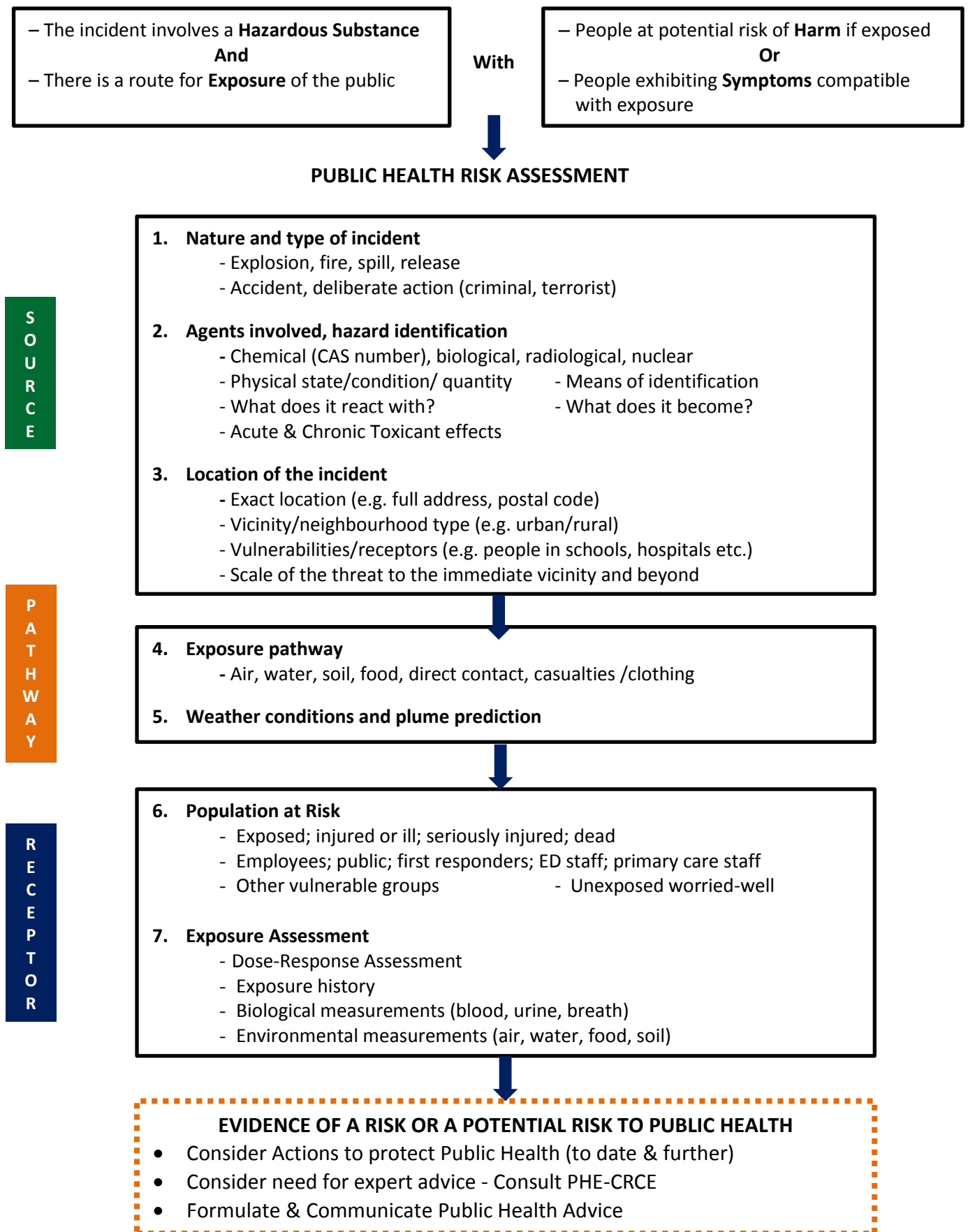
2. Public Health Risk Assessment

2.1. Public Health Medicine All Hazards Incident Response Algorithm



1. [Rapid risk assessment of Acute Public Health Events \(WHO 2012\)](#)
2. [Infectious Diseases regulations, 1981 as amended](#)
3. [Medical Officer of Health \(Duties of Officers Order\) 1949](#)

2.2. Public Health Environmental Risk Assessment Incident Response Algorithm⁵



⁵ Incident check list adapted from “Health Protection Incident Response Framework”, Health Protection Scotland.

2.3 Chemical Incident: Post-Acute Phase Checklist

(Adapted from HPA 'Acute Chemical Incidents – Basic Checklist, March 2009')

1. **Confirm that the chemical hazard initially identified is the actual chemical hazard**
2. **Identify source-pathway-receptor linkages**
 - Is there an aquifer used for drinking water abstraction?
 - Is there a river or stream used for recreational purposes?
 - Is the land used to grow food?
 - Are there other contaminant transport pathways?
 - Are there plastic water supply pipes?
3. **Obtain any plume modelling (real time or after event) data**
4. **Obtain updates on incident evolution and any secondary contamination**
5. **Consider whether a site visit would help the Public Health Risk Assessment and if so, make arrangements with the inter-agency team to undertake detailed site assessment. The following actions might be needed:**
 - Collect maps and plans of the area
 - Establish topography and direction of groundwater flow
 - Collect further environmental samples
 - Compare any measured concentrations with regulatory standards and any past sample results, e.g. from routine environmental sampling
6. **Re-evaluate incident category**
7. **Ensure appropriate remedial action has been undertaken to remove source of contamination or exposure pathway**
 - Once confirmed, no further action required
 - Go to 'post incident questions'
8. **Undertake further assessment of health impact**
 - Consider whether biological sampling of sentinel cases and other exposed individuals is necessary
 - Consider carrying out a questionnaire survey of all those exposed to identify any adverse health effects
 - If necessary, initiate a case control study to assess health impacts
 - Consider long-term follow up and monitoring of the exposed population

Post Incident Questions

9. **Has the incident been declared over for organisations involved and are they standing down?**
 - Have all those affected been informed of the end of the incident?
 - Have all those involved in incident management been advised of event close?

10. Have all those with adverse health effects fully recovered?

- Do any patients need long term follow up?
- Consider longer-term epidemiological surveillance
- Relevant public health resources for surveillance post incident include CIDR, GP Co-op OOH database, Health Atlas, Eurocat, HIPE

11. Are all records of the incident complete and up to date?

12. Conduct an audit of the management of the incident

- Identify lessons learnt
- Identify necessary modifications to emergency and/or incident plans

A final media briefing, by the MEM team, will detail how the incident has been managed and any remaining adverse health impact and any preventative actions to be taken.

3. Ireland's Framework for Major Emergency Management

The Framework for Major Emergency Management (2006) was developed to set out common arrangements and structures for front line public sector emergency management in Ireland and it has an "all hazards" approach. A few relevant excerpts from Ireland's Framework for Major Emergency Management are presented here. Please read the [full document and appendices](#) for more detail.⁶

Section 1.5 of The Framework defines a Major Emergency as:

"Any event which, usually with little or no warning, causes or threatens death or injury, serious disruption of essential services or damage to property, the environment or infrastructure beyond the normal capabilities of the principal emergency services in the area in which the event occurs, and requires the activation of specific additional procedures and the mobilisation of additional resources to ensure an effective, co-ordinated response."

The notification of a declared Major Emergency should include the ETHANE message:

- E** Exact location of the emergency
- T** Type of Emergency (Transport, Fire, spill, chemical, biological, radiological etc)
- H** Hazards, present and potential
- A** Access, Egress routes
- N** Number and type of casualties
- E** Emergency services required and present

The principal response agencies are An Garda Siochana, the Health Service Executive and the Local Authorities.

If not involved already, the call to Public Health may come from one of a number of routes (HSE National Director of Health Protection; HSE Chief Emergency Management Officer; Chief Ambulance Officer; Crisis Management Team; Chair of the Regional Interagency Local Coordination Group, Local Authority)

Section 5.9.2 explores the potential role of Public Health Doctors in an emergency:

"Where an emergency results in a real or perceived threat to public health by, for example, the release of chemical, radioactive or biological agents, the contamination of water or food supplies, or the spread of contaminated flood water, it can be anticipated that there will be considerable concern among both the persons immediately affected and the wider public. In such situations, the Health Service Executive Controller should ensure that the local public health services are informed of the situation as soon as possible so that they can become involved in the response at the earliest possible stage.

Public Health Doctors can provide advice, information and re-assurance, where appropriate, to exposed individuals and communities, and can play a key role in the short term and long term monitoring and management of those exposed. They can also play an important part in dealing with queries from the media. Where appropriate, a public health specialist should join the Health Service Executive support team at the Local Coordination Centre, to provide guidance and support on public health and public information issues."

⁶ Department of the Environment, Heritage and Local Government. A Framework for Major Emergency Management. (2006) Available online at <http://mem.ie/>

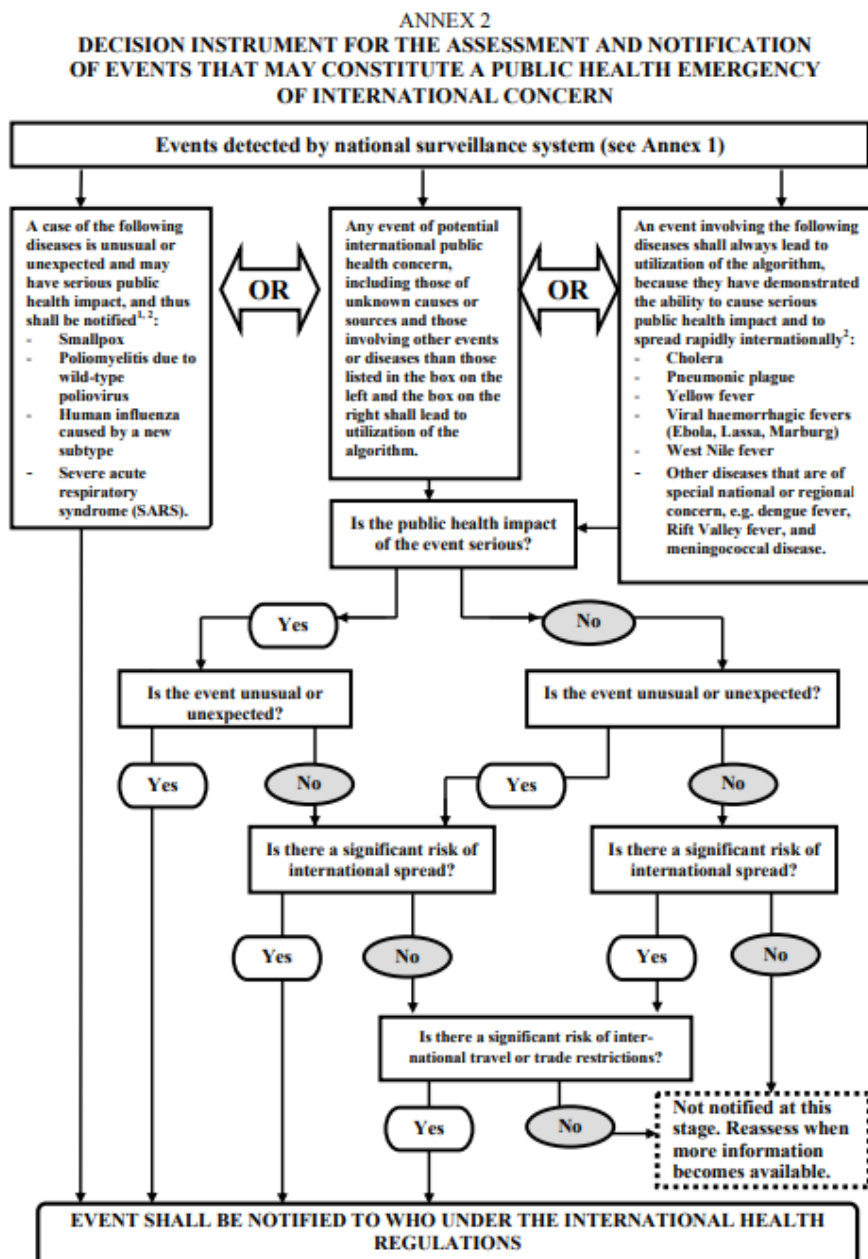
4. WHO International Health Regulations (2005)

Public Health Emergency of International Concern (PHEIC):

“an extraordinary event which is determined to constitute a public health risk to other States through the international spread of disease and to potentially require a coordinated international response”.

This definition implies a situation that is:

- serious, sudden, unusual or unexpected;
- carries implications for public health beyond the affected State’s national border;
- and may require immediate international action.



**If a PHEIC or Potentially a PHEIC: Contact Ireland’s International Focal Point:
Director of the Health Protection Surveillance Centre**

5. Risk Communication

- Effective risk communication is critical in an incident response and should happen early
- Liaise with HSE Communications
- The public health advice given to the public during an incident is an intervention to protect human health in its own right and it is essential that this is communicated appropriately and accurately within interagency press releases and other communications.
- Co-ordinate communications through inter-agency group (when convened)

Risk Communication Strategy

- Should not be overly complex or time consuming to develop.
- **DISSECT** is useful when considering the key components to include in a strategy:

DISSECT⁷

1. **Define** – the issue or problem
2. **Identify** – the stakeholders and the target audience (stakeholder analysis)
3. **Set** – the aim and detailed objectives – prioritise
4. **Select** – the key messages
Ensure the message provides people with:
 - a. understanding of the issue
 - b. understanding of the risks
 - c. what they can do to protect themselves
 - d. what your organisation (and partners) are doing
5. **Engage** – partners who will be involved in managing the incident and who need to contribute to key message development
6. **Choose** – the communication channels (methods, tools and processes)
7. **Track** – and evaluate the impact

Risk Communication Message

- When developing and delivering your message, the acronym **STARCC** can be helpful:

STARCC is about making the message:

1. **Simple** – frightened people don't want to hear big words
2. **Timely** – frightened people want information immediately
3. **Accurate** – make it direct; frightened people won't grasp nuances
4. **Relevant** – give action steps and answer specific questions
5. **Credible** – use empathy and openness to achieve credibility
6. **Consistent** – keep messages consistent, but qualify areas of uncertainty where there may need to be a change to the message, as changes are unsettling and will be scrutinised closely for their significance.

⁷ Communicating with the Public about Health Risk Health Protection Scottish Guidance 2008. Available at <http://www.hps.scot.nhs.uk/resourcedocument.aspx?id=5936>

6. Decontamination Guidance

In an emergency, where there is a possibility of exposed individuals self-presenting to healthcare facilities, it may be useful for Public Health to assist the Emergency Services in alerting health service facilities of the need for decontamination (see section 6.2: algorithm for decontamination). Please note the responsibilities of the different agencies according to the framework for Major Emergency Management (2006).

According to this document;

“The need for decontamination of individuals will be established by the On-Site Coordinator, in association with the other Controllers of Operations. The Health Service Executive has responsibility for providing clinical decontamination and medical treatment to casualties affected by hazardous materials. The fire services have responsibility for providing other forms of physical decontamination of persons at the site. The Health Service Executive will be responsible for decontamination where required to protect health service facilities, such as hospitals, from secondary contamination. Where emergency decontamination of the public is required, the fire service may use its fire-fighter decontamination facilities, or improvised equipment may be used prior to the arrival of dedicated equipment. Where persons have to undergo this practice it should be carried out under the guidance of medical personnel. It should be noted that emergency contamination carries risks for vulnerable groups, such as the elderly and the injured.”

As there are no current Irish decontamination guidelines, we recommend using the following from Public Health Wales.⁸

6.1. Principles of decontamination

Non-caustic chemicals:

- The default process for non-caustic chemicals is to disrobe followed by dry decontamination.
- The single most important step is the prompt removal of clothing (down to underwear if possible).
- Disrobe procedures should be, where possible, conducted by the casualty themselves. This should be as quick as possible and ideally within 15-20 minutes following exposure.
- Dry decontamination should then be undertaken using absorptive materials such as paper towels (blue roll), surgical dressings, cloths etc. to blot the skin.
- Where hair is contaminated wet decontamination of hair is recommended but this should follow the disrobe and dry decontamination process.

⁸ Kibble A., Brunt H, Rixon D. Chemical Decontamination Update: Guidance for Health Boards. Version 2. 5th August 2016; Review date August 2017. Available online at http://www.wales.nhs.uk/sites3/Documents/457/Public%20Health%20Wales%20Decontamination%20Guidance_final%20%28version%202%29_August_2016.pdf

Caustic chemicals:

- For caustic chemicals, disrobe followed by wet decontamination is still recommended.
- Wet decontamination using water should only be used for decontamination where the chemical(s) is confirmed as being caustic or corrosive or if the patient is displaying signs and symptoms consistent with exposure to caustic substances.
- **Wet decontamination also remains the default decontamination process for biological or radiological contaminants.**

6.2. Decontamination guidance algorithm

