



Flood and Coastal Erosion Risk Management Research Programme

A method for monetising the mental health costs of flooding

Project summary SC150007

Recent research from Public Health England (PHE) shows that people that experience flooding in their homes can suffer from mental health illnesses, including depression, anxiety and post-traumatic stress disorder. This has an economic impact, including costs to the health service and lost days at work.

This project developed a method for evaluating the impact of flooding on mental health, and assessing these economic impacts. Prior to this study, the economic case for flood defence schemes and strategies focused on the physical damage of flooding on properties or businesses. This new approach will allow the benefits of avoiding negative impacts on mental health to be considered in the main economic business case when selecting preferred options and applying for flood risk investment.

How did we develop the method?

We developed the method in partnership with the Flood Hazard Research Centre, and in light of discussions with PHE. The project:

- reviewed literature that assessed the mental health impacts of flooding
- reviewed available data concerning health impacts of flooding (in particular the PHE study)
- developed a method to appraise the benefits of avoiding the mental health costs of flooding in flood and coastal erosion risk management (FCERM) economic appraisals.

The new method draws upon data from a PHE study into those affected by flooding during the winter of 2013 to 2014 and the Cumbria floods in 2015.

How do we determine the mental health costs?

The method is based on determining the mental health costs per adult for each flood event and multiplying that by the number of adults in each home.

A 'cost of illness' approach is taken which includes:

- information on the three mental health conditions for which data is available (anxiety, depression and post-traumatic stress disorder)
- prevalence of these conditions
- presence of known treatment plans

- duration of any treatment
- likely impact of illnesses over the short term measured in days of work lost.

We produced an average cost of treatment. This was based on an estimated number of patients with each mental health condition, and the cost of a range of treatments such as hospitalisation, GP care and medication. We estimated work-based losses using the average number of days an employee is absent from work multiplied by the median hourly wage for a full-time adult. This information was combined to estimate the total loss per adult for each mental health condition.

What did we find out?

Mental health impacts increase with the severity of a flood. The costs of flooding were found to increase with depth of flood water inside the home. Costs increase from an average of £1,878 per adult per flood event with internal depths up to 30 cm, to £4,136 where the depth is more than 1 m deep.

The research did not consider coastal erosion and we did not find any references in the literature to the mental health impacts of erosion.

How will we use this work?

This methodology is informing guidance for economic flood appraisals, specifically for projects or strategies seeking flood defence grant-in-aid funding.

This work is part of a wider project that aims to improve methods and data used to calculate the benefits of FCERM investment for recreation, tourism and health. The work will support decisions and provide more opportunities to draw in investment from external parties.

We plan to continue our research into understanding and mitigating the impacts of flooding on public health by investigating: additional mental health issues, impacts on physical health, and the mental health impacts on children.

This summary relates to information from project SC150007, reported in detail in the following output(s):

Report: SC150007

Title: A method for monetising the mental health costs of flooding

Guidance for Flood and Coastal Erosion Risk Management Authorities is available here:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/879942/Mental_Health_Guidance.pdf

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Website: <https://www.gov.uk/government/organisations/flood-and-coastal-erosion-risk-management-research-and-development-programme?cachebust=1612267479>

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