Prevention of unintentional injury in the home in children under 5 years

Research Question

- What are the most effective and cost-effective interventions aimed at reducing unintentional injury of children under 5 years old in the home, and how do such interventions impact on inequalities?

Unintentional injury is a leading cause of death and illness among children and causes more children to be admitted to hospital each year than any other reason. Rates vary according to factors such as age, gender, social class, environment and behaviour. Many of these injuries are preventable.

The issue of child accident prevention has been highlighted by the Chief Medical Officer of England (1), and by strategy documents published in Northern Ireland (2), Wales (3) and Scotland (4). There is a powerful economic case for prevention of unintentional deaths and injuries, as prevention saves costs and returns many life years to society.

Unintentional injuries in children under 5 years old in and around the home are associated with a number of factors including child development, gender, the physical environment in the home, the knowledge and behaviour of parents and other carers (including literacy), parental substance or alcohol misuse, parental mental health problems, overcrowding or homelessness, the availability of safety equipment and new consumer products in the home (5, 6).

In 2014 there was an increase in deaths and hospital admissions from unintentional injury, against a generally decreasing national trend. There are persistent inequalities between socioeconomic groups, with areas that experience higher levels of socioeconomic deprivation having a higher incidence of unintentional injury. Children from disadvantaged circumstances are more likely to die from an unintentional injury than children from more affluent communities. The analysis from the Chief Medical Officer of England's Annual Report (1) shows that the emergency hospital admission rate for unintentional injuries among the under-fives is 45% higher for children from the most socioeconomically deprived areas compared with children from the least deprived. Inequalities can be shown by comparing injury data along the following variables: young age (children under five are most vulnerable to unintentional injuries in the home); disabilities; minority ethnic groups; families on a low income; multiple-occupied housing and social and privately rented housing (7).

There is a strong argument to focus on tackling the leading, preventable causes of death and serious long-term harm. National data identify five injury types which could be prioritised: choking, suffocation and strangulation; falls; poisoning; burns and scalds; and drowning (1).

Just under a third of parents of children aged 0-4 (30 %) want help and/or advice about improving home safety. Parents of younger children in lower income households are more likely to want help and advice, but are less likely to seek it (7).

It is thought that some high-risk groups may be less receptive to interventions than other groups, but there is limited evidence about the reasons why some households may be unreceptive to home safety interventions or about what might encourage greater uptake (8). There is also a lack of cost-effectiveness and related evidence, such as on the standard cost of home safety equipment and installation (9).
NICE guidance (8) has reported that there is limited high quality evidence from the UK on the effectiveness of a number of issues related to home safety in children under 5 years.

It should be noted that researchers exploring outcomes as endpoints in the study design may need to consider intermediate outcomes, such as changes in awareness, attitudes, knowledge and behaviours, as well as changes in injury rates. Studies may consider a reduction in the numbers of incidents where injury is narrowly averted (“near-misses”).

Study designs may include; natural experiments; ecological studies; as well as trials. Researchers to use the most robust design and provide clear justification for their methods. Studies should consider the limited availability and usefulness of current local data relating to preventable unintentional injuries, and how this might be use to demonstrate impact through scaling of interventions.

The following research is of interest:

- Evaluation of effectiveness and cost-effectiveness of home safety interventions. These evaluations need to provide detailed descriptions of intervention and control arm treatments and measure and report injury outcomes, home safety equipment use and safety behaviours.
- Evaluation of a range of home safety equipment which address the ‘top 5’ childhood unintentional injuries.
- Evaluation of interventions which seek to prevent hot beverage scalds in children under 4 years
- Evaluation of different approaches to installing and maintaining home safety equipment and on the comparative effectiveness of combining different approaches (for example, education combined with the installation of safety equipment).
- Evaluation of non-equipment focussed interventions which seek to prevent injury in the home
- Evaluation of the perception of risks and benefits and the impact on children and young people, parents and carer’s behaviour when their environment is made safer.
- Evaluation of targeted approaches and the effects of interventions on different population groups, including deprived and high-risk households.
- Evaluation of the uptake of effective interventions, including barriers and facilitators in local areas to uptake, and how to improve uptake and sustainability of interventions and programmes. Resource and cost issues related to the providers and users of the intervention should be explored and taken into account in proposed interventions.
- Research which includes collaboration with local authorities and/or relevant third sector organisations would be welcome.

Studies may evaluate multi-component interventions. Researchers are asked to specify and justify study design and indicate how long-term impact will be assessed. Interventions to be evaluated must be outside the NHS and the primary outcome must be health-related. Researchers should identify underlying theory and should include a logic model to help explain underlying context, theory and mechanisms. Research should consider the impact of the intervention on health inequalities. Proposals should ensure adequate public involvement in the research.

Public health initiatives are complex and wide-reaching. Evaluation should acknowledge this by adopting a broad perspective, taking account of costs and benefits to all relevant sectors of society. A health economic evaluation to inform affordability and return on investment should be included where appropriate.
For all proposals, applicants should clearly state the public health utility of the outcomes and the mechanisms by which they will inform future public health policy and practice. Details about the potential impact and scalability of interventions, if shown to be effective, should be provided.

For the evaluation of time sensitive naturally occurring interventions applicants may wish to consider the fast-track work stream - http://www.nihr.ac.uk/phr.

*'Effectiveness' in this context relates not only to the size of the effect, but it also takes into account any harmful or negative side effects, including inequitable outcomes.

8. NICE. Unintentional injuries in the home: interventions for under 15s (PH30) 2010.

Remit of Call:

All proposals submitted under this call must fall within the remit of the Public Health Research programme. Please go to http://www.nihr.ac.uk/phr for details.

General Notes:

The NIHR Public Health Research programme evaluates public health interventions, providing new knowledge on the benefits, costs, acceptability and wider impacts of non-NHS interventions intended to improve the health of the public and reduce inequalities in health. The scope of the programme is multi-disciplinary and broad, covering a range of interventions that improve public health delivered in a non-NHS setting.

The NIHR Public Health Research programme is unable to fund intervention costs. The affordability of the intervention, and at least an indication of the public health stakeholder(s) willing to fund the intervention, should be referenced within the outline application. At the full application stage, statements of support confirming stakeholder commitments to funding will be required.

The NIHR Public Health Research programme is interested in and open to the joint funding of research projects with other organisations such as charities and the third sector. If you would like to explore the potential for joint funding, please contact us at phr@nihr.ac.uk with details of your proposal and the other funder prior to submission.
Notes to Applicants

The NIHR Public Health Research programme is funded by the NIHR, with contributions from the CSO in Scotland, NISCHR in Wales, and HSC R&D, Public Health Agency, Northern Ireland. Researchers in England, Scotland, Wales and Northern Ireland are eligible to apply for funding under this programme.

Applicants are recommended to seek advice from suitable methodological support services, at an appropriate stage in the development of their research idea and application. It is advisable to make contact at an early stage as possible to allow sufficient time for discussion and a considered response.

The NIHR Research Design Service (www.nihr.ac.uk/rds) can advise on appropriate NIHR programme choice, and developing and designing high quality research grant applications.

Clinical Trials Units are regarded as an important component of many trial applications however, they are not essential for all types of studies to the PHR programme. The CTUs can advise and participate throughout the process from initial idea development through to project delivery and reporting. NIHR CTU Support Funding (www.nihr.ac.uk/ctu) provides information on units receiving funding from the NIHR to collaborate on research applications to NIHR programmes and funded projects. In addition, the UKCRC CTU Network (http://www.ukcrc-ctu.org.uk) provides a searchable information resource on all registered units in the UK, and lists key interest areas and contact information.

Transparency agenda

In line with the government’s transparency agenda, any contract resulting from this tender may be published in its entirety to the general public. Further information on the transparency agenda is at:

http://transparency.number10.gov.uk/

http://www.ogc.gov.uk/policy_and_standards_framework_transparency.asp

http://www.contractsfinder.businesslink.gov.uk/