



RIGHTS to WARMTH

Health Impacts of Cold

The General Issue – Hypothermia and Hospital Admissions

There are 25,000-30,000 'excess winter deaths' each year as a result of lower temperatures. This is high relative to other Northern European countries, which suggests that it can be reduced. Relatively few deaths are attributable directly to hypothermia, but common sense suggests that cold weather contributes to deaths. If this is so, it is further likely that excess winter deaths are the indicator of much greater health problems within the population that are exacerbated by cold temperatures. Whilst there is no direct evidence that it is so (because of a lack of data), it is likely that mild hypothermia is a largely undetected contributor to poor health amongst a sizeable proportion of the population, particularly the elderly.

The impact of cold on a person's health is well understood (see below). What is not understood is the causal relationship between hypothermia, particularly mild hypothermia, the gradual breakdown of health, and the consequential presentation of people in hospitals or GP surgeries.

Hypothermia contributes substantially to respiratory and cardiac conditions, as well as the problems arising from long term conditions such as diabetes. It can also cause confusion and increased vulnerability to accidents. Where any of these effects lead to hospital admission, hypothermia must be treated before the principal condition can be addressed.

The implications are very substantial:

1. Hypothermia means it takes significantly longer to treat someone in any given episode; and
2. Success rates for treatment are significantly worse for those with hypothermic condition, with a higher rate of readmission; which in turn means
3. Higher costs for both health and social care; and
4. Reduced effectiveness in the management of long term conditions about which the NHS is so concerned.

Assuming just a proportion of the 4.6m emergency admissions to hospital each year are complicated by hypothermia, this represents an enormous and largely unnecessary cost and management problem for the NHS, leading both to bed blocking and the prospects for successful treatment of emergency admissions and will also have an impact on planned admissions and thus on the achievement of the 18 week target for hospital treatment.

The cost to the NHS of conditions being complicated by hypothermia must run into 10's of £m's each year.

Similarly, the knock on effect on care services is also very substantial. Being properly warm means that people stay independent and in significantly better health without the need for substantial care intervention. So also is the impact on carers at home, many of whom are themselves old, who also suffer the same hypothermic conditions. But of course, hospital admissions themselves reflect an even larger number of people whose health deteriorates through insufficient heat.

It is difficult to quantify the problem but in small studies carried out in one local acute trust (unpublished)

- 12-13% of patients admitted to A&E with fractured hips
- 20% of elderly patients admitted to hospital as emergencies

had mild hypothermia. If we assume that the proportion of people over 65 who are admitted to hospital as emergencies in England is the same as the overall proportion of admissions that are emergencies, and that 20% of these have mild hypothermia, this suggests that over 330,000 people are admitted into hospital each year with mild hypothermia (although much of this might not be diagnosed). This will represent only a small proportion of those who actually experience mild hypothermia – this could easily be between 1 and 2 million in England alone.

Hypothermia and the Body

The human body is designed to function at a nearly constant internal (core) temperature of 37°C. Hypothermia – defined as a core temperature of less than 36°C – can be mild, moderate, or severe. All can have serious adverse consequences to basic health condition. Extreme hypothermia – associated with exposure, unconsciousness and even frost-bite - is known to be potentially fatal and emergency services are well equipped to respond to it. It is almost always a result of outdoor exposure.

Mild hypothermia (33.0 to 35.9°C), for which the incidence is much greater, can also have adverse consequences but is often not recognised.

The older we get the more likely it is that we become less sensitive to extremes of heat. The thermoregulatory centre of the brain that sensitises us to temperature deteriorates with age, a process that starts typically from 55. And certain conditions, which are often not diagnosed until severe, including an underactive thyroid, mean that in mild hypothermic conditions the body is not responding effectively, triggering the worsening of general health condition.

Mild hypothermia is a recognised side-effect of anaesthesia and, because of its known possible consequences, prevention is an important component of the care of patients having surgery.

It is much less well understood that mild hypothermia can also be a significant problem for patients living at home. This is obviously exacerbated during cold weather if heating is inadequate. This is a general problem for people living in cold conditions including young children. It is a major risk for the elderly and can have the following consequences:

- Alteration of normal temperature regulation responses
- Reduced body fat
- Reduced mobility
- Reduced shivering response to cold
- Diseases of old age

- Infection – sepsis in the elderly can cause hypothermia rather than the usual high temperatures

Mild hypothermia will often go undetected in the elderly as its signs and symptoms can include:

- Joint stiffness
- Confusion and clumsiness, potentially resulting in falls
- Increased urine output, potentially leading to incontinence.

These signs can often be mistaken for existing health problems such as arthritis, dementia or infection.

Hypothermia can lead to

- Breathing and heart problems
- Abnormal blood clotting
- Blood sugar control

Mild hypothermia in the elderly is therefore a chronic condition which can have damaging consequences if not treated. A further problem is diagnosis of mild hypothermia in both hospital and community, as

- body temperature is not always recognised as an equally important 'vital sign' as heart rate and blood pressure
- reliable, non-invasive, thermometers have not always been available and/or used correctly

New thermometers are now available and this technology makes it possible to accurately diagnose mild hypothermia and use as a basis from which to initiate appropriate interventions.