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Kovats, RS (2006) Heat waves and health protection. *BMJ*, 333 (7563). pp. 314-315. ISSN 0959-8146 DOI: 10.1136/bmj.333.7563.314

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mostly hypotension and tachycardia, were few. The incidence of dyskinesia and extrapyramidal side effects was also surprisingly low—0.4% in the 25 mg group and 0.8% in the 50 mg group (number needed to harm 156 for both doses).

Newer drugs such as 5-HT₃ antagonists have undoubtedly improved outcomes; a neurokinin receptor antagonist (aprepitant) has also been introduced in the UK for the treatment of chemotherapy induced nausea and vomiting.⁸ However, the mechanism underlying postoperative nausea and vomiting is so complex that a universal panacea is unlikely, and a multimodal approach is best for both prevention and treatment. In this regard, the optimum dose of metoclopramide combined with dexamethasone offers another option for prevention of nausea and vomiting or as an adjunct or alternative to existing treatment.

A head to head trial of metoclopramide and dexamethasone versus a 5-HT₃ antagonist combined with dexamethasone would be the next logical step. In the meantime, the trial by Wallenburg et al supports metoclopramide as an option for the prevention and treatment of postoperative nausea and vomiting. This use of metoclopramide would probably result in considerable cost saving compared with the newer 5-HT₃ antagonists, such as palonosetron, despite their longer duration of action.

Finally, Wallenborn and colleagues also found that regular consumption of alcohol protects against postoperative nausea and vomiting. This finding adds to the debate about why certain factors, such as smoking, protect against postoperative nausea and vomiting.⁵

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- 1 Kapur PA. The big, little problem. *Anaesth Analg* 1991;72:243-5.
- 2 Wallenborn J, Gelbrich G, Bulst D, Behrends K, Wallenborn H, Rohrbach A, et al. Prevention of postoperative nausea and vomiting by metoclopramide combined with dexamethasone: randomised double blind multicentre trial. *BMJ* 2006;333:324-7.
- 3 Henzi I, Walder B, Tramer MR. Metoclopramide in the prevention of postoperative nausea and vomiting: a quantitative systematic review of randomised, placebo-controlled studies. *Br J Anaesth* 1999;83:761-71.
- 4 Apfel CC, Greim CA, Haubitz I, Goepfert C, Usadel J, Seifin P, et al. A risk score to predict the probability of postoperative vomiting in adults. *Acta Anaesth Scand* 1998;42:495-501.
- 5 Habib AS, Gan TJ. Combination therapy for postoperative nausea and vomiting: a more effective prophylaxis? *Ambulatory Surg* 2001;9:59-71.
- 6 Gan TJ, Meyer T, Apfel CC, Chung F, Davis PJ, Eubanks S, et al. Consensus guidelines for managing postoperative nausea and vomiting. *Anesth Analg* 2003;97:62-71.
- 7 Apfel CC, Kortilla K, Abdalla M, Kerger H, Turan A, Vedder I, et al. A factorial trial of six interventions for the prevention of postoperative nausea and vomiting. *N Engl J Med* 2004;350:2441-51.
- 8 Aapro M, Johnson J. Chemotherapy-induced emesis in elderly cancer patients: the role of 5-HT₃-receptor antagonists in the first 24 hours. *Gerontology* 2005;51:287-96.
- 9 Sweeney BP. Why are smokers protected against PONV [editorial]? *Br J Anaesth* 2002;89:1-4.

Heat waves and health protection

Focus on public health, social care, and building regulations

This summer Europe has again been affected by a major heat wave and England triggered its heat wave response plan for the first time.¹ In 2003, the impact of the heat wave in central France was unprecedented, with more than 14 000 excess deaths attributed to the 20 day event.² This year, France has reported considerably fewer deaths, and the authorities can claim some credit for effective public health intervention. The United Kingdom experienced a more severe heat wave than in 2003, but the full impact on health is not yet known. Schools, offices, hospitals, and the transport infrastructure were all affected badly. Although much is known about the regulation of body temperature in healthy fit adults, little research has been undertaken on the social and environmental determinants of heat related mortality. People with psychiatric disorders, depression, cardiovascular and cerebrovascular conditions,³ and diabetes⁴ are at high risk of death during a heat wave. Specific drugs, such as neuroleptics and anticholinergics, can also impair thermoregulation.¹ Susceptible people may be socially isolated and may have a mental illness or disability that limits their ability to care for themselves. The perception of ambient temperature is also poorer in elderly people, who do not always realise that they are becoming too hot.⁵ The passive dissemination of advice on heat avoidance is insufficient for health protection, and vulnerable people need to be actively identified and cared for.⁶

Public health measures implemented in Europe after 2003 have centred almost exclusively on heat health warning systems that forecast high risk weather conditions to trigger public warnings.⁷ Level 3 of the heat wave plan for England, triggered in early July, requires primary care trusts to “Commission additional care and support, involving at least daily contact, as necessary for at-risk individuals living at home.” But there is much confusion about identifying people at risk as well as the specific advice to be given. Cities in Italy are the most advanced in identifying and contacting vulnerable people at home during a heat wave. So far, no heat health system has been formally evaluated, and the effectiveness of individual interventions is unknown.⁶

The impact of heat waves also reveals important lessons about the care of the elderly and dispossessed in our society—in both the community and social care. The impact of heat waves in the United States is mostly confined to poor elderly people living in urban areas—who cannot afford air conditioning—and to the homeless. Elderly people in nursing and residential homes are more frail than those living independently or with family. Although such people have a higher risk of death than the general population, they should not have a higher risk of heat related death. Heat illness can be prevented by keeping the patient cool, hydrated, and with adequate salt balance. In the UK, air conditioning is rare in clinical settings, and hospital

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inpatients may also be exposed to high indoor temperatures and a high risk of heatstroke.⁸

One of the striking things about the heat wave in France in 2003 was that the high mortality was not detected for so long. In the UK, several indicators of heat morbidity are now monitored routinely using data from GP practices and NHS Direct. However, many countries in Europe, including the UK, do not have rapid access to mortality data from their registration systems. Some cities have solved this by bypassing the official system to get data directly from funeral homes within 24-48 hours.

The Euroheat network,⁹ coordinated by the World Health Organization in Rome, and funded by the European Commission, is developing good practice for health protection during heat waves as more countries develop heat health warning systems. An inter-agency approach—involving key health and social care providers as well as stakeholder groups—is needed. Heat wave systems also need to be better integrated within the disaster response agencies.

Much heat related mortality occurs outside of defined “heat wave” events.¹⁰ The best health protection measures are those that ensure long term changes in behaviour, such as the training of staff and carers and the development of appropriate care standards in residential homes (as has been implemented in Hessen, Germany⁹). Heat stress is also an occupational health problem for indoor and outdoor workers, and health and safety agencies need to be prepared for the impact of hotter summers. London’s mayor is being particularly proactive with regard to climate change and is developing a statutory adaptation strategy to ensure that the infrastructure is appropriate for future climates. Climate change needs to be taken into account in health protection in Europe.¹¹ The UK has recently had its hottest month since records began in

1660.¹² The effects of climate change are appearing earlier than anticipated. It would be tragic if the main response to hotter summers is to install inefficient air conditioning and to miss the opportunity to develop effective and more equitable health protection measures for extreme weather.

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Competing interests: RSK is funded by DG Sanco for work on the Euroheat project.

- 1 Department of Health. *Heatwave—plan for England—protecting health and reducing harm from extreme heat and heatwaves*. London: DoH, 2004. www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPolicyAndGuidanceArticle/fs/en?CONTENT_ID=4086874&chk=opuHhJ (published 2004, superseded by 2005 edition; last accessed 4 Aug 2006).
- 2 Hemon D, Jougl E. [The heat wave in France in August 2003.] *Rev Epidemiol Sante Publique* 2004;52:3-5.
- 3 Stafoggia M, Forastiere F, Agostini D, Biggeri A, Bisanti L, Cadum E, et al. Vulnerability to heat-related mortality: a multi-city population based case-crossover analysis. *Epidemiology* 2006;17:315-23.
- 4 Schwartz J. Who is sensitive to extremes of temperature? A case-only analysis. *Epidemiology* 2005;16:67-72.
- 5 Collins KJ, Exton-Smith AN, Dore C. Urban hypothermia: preferred temperature and thermal perception in old age. *BMJ* 1981;282:175-7.
- 6 Kovats RS, Ebi KL. Heatwaves and public health in Europe. *Eur J Public Health* (in press).
- 7 Koppe C, Jendritzky G, Kovats RS, Menne B. *Heatwaves: impacts and responses*. Copenhagen: World Health Organization, 2003.
- 8 Ferron C, Treweek D, Le Conte P, Batard ER, Girard L, Potel G. [Heat stroke in hospital patients during the summer 2003 heat wave: a nosocomial disease.] *Presse Med* 2006;35:196-9.
- 9 World Health Organization. *Euroheat*. Geneva: WHO, 2006. http://www.who.dk/globalchange/Topics/20050524_2 (last accessed 4 Aug 2006).
- 10 Hajat S, Armstrong B, Baccini M, Biggeri A, Bisanti L, Russo A, et al. Impact of high temperatures on mortality: is there an added “heat wave” effect? *Epidemiology* (in press).
- 11 Menne B, Bertollini R. Health and climate change: a call for action. *BMJ* 2005;331:1283-4.
- 12 Met Office. *News release: weather records tumble*. London, 2006. www.metoffice.gov.uk/corporate/pressoffice/2006/pr20060801.html (last accessed 4 Aug 2006).

Governance of research that uses identifiable personal data

Will improve if the public and researchers collaborate to raise standards

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Information contained in routine medical records, disease registries, completed trials, and research programmes is an invaluable resource for research into public health. The secondary use of such data, which were often collected for unrelated purposes, has demonstrated the late effects of treatment, indicated social differences in health care, suggested environmental causes of cancer, and identified epidemics. For years the United Kingdom has been in the forefront of this research, and the NHS has been a unique source of such data.

In most medical research, doctors and investigators have direct contact with patients and can seek spoken and written consent directly. But research reusing previously collected data may encounter considerable difficulties with respect to both consent and anonymity. The study populations may comprise many thousands of people; some patients will have moved or died; the

information may need to be linked to two or more databases; and individual identification may be necessary to prevent double counting. Problems may arise regarding the necessity and practicability of obtaining consent, the degree to which the data can be anonymised without losing vital information, and the security of the data at all stages.

Such difficulties concerning this secondary use of identifiable data are now damaging our population based research—an “own goal” at a time when a national system of health records would give us unequalled opportunities for research to improve health. A series in the *BMJ*, which ends this week, has highlighted these problems and suggested solutions.¹⁻⁴ A recent report from the Academy of Medical Sciences also provided an analysis and suggested ways forward.⁵

The problems arise from changes in the law and their interpretation by regulators, and from increasing