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BMJ

Contour control, survival, and quality of life

Ideal body weight is far lower than average

See p 1311

Body weight is the archetypal risk factor for morbidity and mortality. It is repeatedly measured without going away. It figures voluminously in the press, supporting an inflated consumer industry in dietary and other products. It was adopted early by life insurance companies when little else was measurable. Medical science is bankrupt of effective treatments for obesity, it confuses the public as to whether being overweight is determined by fate or free will, and it keeps changing the units of measurement imperial to metric, body mass index,[1] waist to hip ratio,[2] and waist circumference[3] resulting in familiarity by few British doctors and even fewer patients. The government decrees, Canute-like, that the tide of obesity is to go out[4] when, as elsewhere, it is coming in,[5] with Britain accumulating, I estimate, some 10 000 metric tonnes of blubber a year. Into this sombre picture comes the paper in this week's *BMJ* by Shaper and colleagues (p 1311).[6] Using data from the British regional heart study, the authors report 15 years' follow up of mortality and cardiovascular morbidity in relation to the body mass index of middle aged British men seen in the late 1970s. What does the paper show?

The answer on first glance might well be: not much. Those indoctrinated in the perils of obesity may be unimpressed by the gradient of mortality against body mass index. The pattern, as elsewhere, is U shaped. All cause annual mortality was 12/1000 overall, 19 in the leanest group (body mass index < 20), 11 in the best surviving group (body mass index 22-24), and 15 in the obese group (body mass index > 30). These categories can be typified in a man 1.73 metres tall (5 feet 8 inches). His squared height would be 3.0, and a body mass index of 20 would imply a weight of 60 kg (about 9.5 stone), while a body mass index of 30 would imply a weight of 90 kg (about 14 stone). The excess mortality in the obese group was 28% above the average and 39% above the best. The closeness of the overall average mortality (12) to the optimum mortality (11) might suggest that obesity is not contributing to many deaths in the population, but appearances can be deceptive.

Flat, U shaped, or J shaped curves for all cause mortality are found in relation to other risk factors such as cholesterol[7] and alcohol consumption.[8] Underweight cigarette smokers help to flatten the mortality curve for obesity. The body mass index is a crude indicator of obesity across individuals. In our sedentary society, barring fluid retention or enforced immobility, we can relate personal variation in weight to changes in subcutaneous or intra-abdominal fat. Extrapolation across the population is less reliable. People of similar height who vary in weight do so in bone and muscle mass as well as fat. Body mass index corresponding to individual lean carcass mass will vary considerably. The study's survival curve is flattest in the middle of the range, where most confusion and inaccuracy will occur in categorising individuals.

The composite curve of all cause mortality is derived from several components. The curves for cancer deaths and for non-cancer, non-cardiovascular deaths show a negative gradient with increasing body mass index that is strong enough almost to obliterate the effects of the positive gradient for cardiovascular deaths. The findings for cardiovascular deaths are strongly reinforced if morbidity from non-fatal myocardial infarction, stroke, and diabetes are added to the event rates. In addition the paper translates a positive correlation with increasing body weight for several cardiovascular risk factors.

Based on combined mortality and morbidity and rates of risk factors, the authors suggest that the ideal body mass index should be around 22, so our typical man should weigh 66 kg (about 10½ stone) instead of 77 kg (over 12 stone). They also suggest that national policies should aim to modify the distribution of body weight in the whole population rather than in the proportion of the population labelled as obese. This recommendation is consistent with the epidemiological principle that the proportion of the population in the extreme category is determined by the population mean.[9] Reducing numbers at the extreme would require most of the population to change. At present in Britain the population mean weight is increasing, which implies massive percentage increases in those who are obese and very obese.

What are the implications of increasing body weight in the population? The authors make a convincing case for increased cardiovascular risk factors, morbidity, and mortality, particularly from diabetes. Data on the consequences of change in body weight in individuals are entirely consistent,[10] (and, for the reasons given above, the within person mortality gradient will be steeper than the population graph) so there is a plausible cause and effect relation.

Unfortunately, the same is not true at the low end of the U shaped curve, where the pathways relating low body mass index to excess cancer or respiratory deaths are too poorly understood for us to be sure that weight gain would reduce mortality.

In their analysis of morbidity the authors did not include musculoskeletal, respiratory, and other condi-

tions whose relation to obesity might have been of interest. The implications from this and similar studies are depressing, but there is an epidemiological paradox. Why is cardiovascular mortality falling in many countries where obesity is increasing? While increasing obesity is a threat to survival and the quality of life, some more powerful trends in risk factors must be acting in mitigation.

Meanwhile, for those of us not susceptible by sex age to other biological explanations for increasing girth, and change in waist circumference seems the best way of monitoring potentially harmful intra-abdominal fat.[2-10] If we are spilling over the tops of our old dinner jacket trousers we should be attempting to shrink back into them.

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The future of Britain's high security hospitals

The culture and values won't change until the Prison Officers' Association is ousted

Until a decade or so ago, the vast majority of mentally disordered offenders who posed a threat to public safety in Britain were consigned to one of the country's three "special hospitals", Broadmoor, Rampton, and Ashworth (previously Moss Side and Park Lane). This is no longer the case. Most patients on whom a crown court judge has imposed a restriction order (under section 37/41 of the Mental Health Act 1983) are now cared for in regional secure units, general NHS psychiatric inpatient acute units, and independent sector hospitals. These institutions operate far more liberal regimes but with no less safety and without the problems that have dogged the special hospitals. Now that their role is much diminished, do these troubled hospitals have any role in the future of forensic mental health care? And if they do, how can they become clinically excellent institutions?

The special hospitals were run directly by the Home Office and staffed like prisons until 1948. They were then transferred to the Ministry of Health but did not join the new NHS, being managed directly by civil servants. After increasing concern in the late 1980s about standards of care and security, the Special Hospitals Service Authority was established in 1989 to oversee the service at arm's length from the Department of Health. The undersecretary responsible for the service at that time, Cliff Graham, made no secret of his disquiet about the proposed continuation of a centralised management structure, but he felt it was a reasonable interim solution while the hospitals prepared themselves for greater self governance. One of the authority's main problems was to establish management control over a large group of staff that Mr Graham and others perceived to have a damaging influence on standards of care through their rigid, authoritarian, and denigrating attitudes to patients. A widely leaked internal report (the Olliff report, Department of Health, 1988, unpublished) suggested that, unless these staff members could be controlled, the only solution to the persistent problem of poor quality care was rapid closure of all three hospitals.

The authority was thus to be a transitional body with a maximum life of five years to effect the modernisation of the service and explore the possibility of closing the institutions. In the event, the authority survived seven years, and the hospitals did not close. They finally joined the NHS as three separate health authorities only in April last year. However, a central commissioning role was retained in the form of the High Security Commissioning Board within the Department of Health.

The hospitals' origins within the criminal justice system and their subsequent exclusion from the mainstream of mental health services explain the curious anomaly that their dominant staff union is the Prison Officers' Association. This union, or perhaps more accurately its membership within the hospitals, has played a fundamentally destructive role in the struggle to turn the hospitals into therapeutic institutions. The service has been dogged for 50 years by recurrent scandals pointing to an environment and culture which reflects on the uncaring and demeaning attitude to patients.[1] The 1992 Ashworth Hospital inquiry report reflected at length on a regime that seemed to have learnt little from the 1980 Boynton inquiry on conditions at Rampton.[2] Biennial reports of the Mental Health Act Commission since 1984 have repeatedly commented on the impoverished regime, overly restrictive and often petty security regulations, the emphasis on mechanical security rather than on the safer strategy of getting to know patients well, and the lack of therapeutic optimism of staff.[3]

The blame for such conditions has been attributed repeatedly to a core group of members of the Prison Officers' Association which has exercised enormous

Ashworth Hospital Inquiry (1992)[1] investigated the circumstances surrounding four specimen untoward incidents: a patient's sudden death, an alleged sexual assault by staff on a patient, and serious physical assaults. The events spanned several years. The Panel found:

- a culture of denigration of patients
- frequent physical and mental bullying of patients by staff
- overt racist attitudes and staff membership of right wing, racist political groups
- victimisation and bullying of RCN members
- poor quality nursing care
- frequent use of seclusion as a punishment
- a rigid, over restrictive regime
- circulation of hate mail and offensive literature to patients and victimised staff
- lack of therapeutic optimism, poor clinical team work

power. This group has filled the vacuum created as hospital management teams had their authority increasingly undermined and invalidated by senior civil servants and ministers, both in the Home Office and Department of Health, who, in the words of one civil servant, wanted to keep the lid on things. Local managers have repeatedly been prevented from taking the tough measures necessary to root out union ringleaders for fear of provoking industrial action that could then spread to prisons. Latterly, a ministerial culture of obeisance to tabloid press public opinion has added a further unhelpful dimension.[4]

What those involved find particularly depressing is that heroic attempts have in fact been made in recent years to improve the hospitals; first rate chief executives were appointed, some joint academic appointments have been made, some new ward managers were brought in from outside. Most importantly, the sole negotiating rights on terms and conditions of service held by the Prison Officers' Association were ended, and staff who wished to ally themselves with the quite different culture and values of the Royal College of Nursing and Unison were at last able to sit in at the staff-management negotiating forum. Furthermore, patients' councils have been established in the past five years, and the complaints machinery has improved. There has also been steady, hard won progress towards a 24 hour nursing regime to replace the old 10 hour, night time lock up in single rooms and dangerously claustrophobic dormitories. This has required staff to accept unwelcome major changes to their shift patterns and working practices.

An increasing majority of nursing staff now belong to the Royal College of Nursing or Unison. In Broadmoor in 1988, 800 of the 1200 staff were members of the Prison Officers' Association, compared with 500 today. There remain, however, about 1000 members in the three hospitals, and many staff have dual membership. Working in the special hospitals is highly stressful and occasionally dangerous. The work requires exceptional personal skills and qualities. But the same is true of regional secure units, and indeed the most disturbed and difficult acutely ill offenders are cared for without support from the Prison Officers' Association.

Since the three new authorities were established last year, the new boards have increased their efforts to persuade the Prison Officers' Association to accept a liberalised and safer regime, but the union's response has been, in the words of a senior staff member at Broadmoor, to go back to their old ways. In all three hospitals a hard core of staff—at Broadmoor estimated to be 150 or so—are believed to be behind a new wave of hate mail, intimidation of new staff, victimisation of non-members, and threats to senior managers (a toy grenade was found under a senior executive's car last month). Frank Jordan, the chairman of the union's Broadmoor branch, resigned in late March, it is widely thought because of his lack of sympathy with the old guard and a feeling that he could not oust the troublemakers. There are many decent men and women in the union, but their voices are swamped by the vociferous minority.

The government's 1994 review of high security services concluded that the special hospitals no longer meet future requirements, and a wide range of smaller units providing different styles of care and rehabilitation would be needed.[5] Plans for new services for those long term patients who need lesser degrees of security are now well advanced, and the transfer of these patients will leave the hospitals with the most difficult groups to manage. The three new hospital boards have the management talent and imagination to provide a diverse range of improved services for these difficult patients. But they must have the unequivocal support of the NHS Executive and ministers to remove NHS patients from the care of an inappropriate union. Put bluntly, if such a union has a role in a civilised society, it is surely not working in hospitals caring for seriously mentally ill people. The choice is a stark one: either the hospitals must change or they must close completely. Many observers believe that the culture and values will never change until the Prison Officers' Association is ousted. De-recognition of the union's right to negotiate on its members' behalf would be a first step to removing it from the institutions, a move which all the authorities would welcome.

Last year, the three special hospitals' chief executives asked Ken Jarrold, the NHS Executive director responsible for policy on human resources, whether the executive would support de-recognition of the union. Mr Jarrold sympathised but felt that such a move would only be supported by ministers after the election.

The election has come and gone. Let us hope that the new secretary of state for health will have the courage to support such a decision.

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Professor Murphy was vice chairman of the Mental Health Act Commission from 1988 to 1994 and a member of the panel of inquiry into events at Ashworth Hospital.[2]

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New challenge for palliative care

To share its special mission with a wider audience

For palliative care, the past decade has been a time of change and growth. In 1985 there were fewer than 100 hospices in Britain; now there are over 200. There are now 400 home care teams compared with fewer than 50 in 1985, and the specialty of palliative care medicine is well established.[1] The next few years are likely to be more difficult. Research by Addington-Hall and McCarthy has shown that there is still much to be done.[2] Their survey of the carers of 2074 patients who died of cancer in 20 districts showed that 88% of patients were reported to have been in pain, 66% were said to have found the pain extremely distressing, and 61% were said to have experienced it in the last week of life.

Higginson has projected an increased need for specialist palliative care from patients with non-cancer diagnoses.[3] This might increase numbers of patients by at least 50%. There will be pressure to improve the evidence base,[4] and services will have to face more funding challenges in meeting local competition without special funding from central NHS budgets.

Patients' preferences and views are likely to attract more attention. Townsend has shown that many more patients wished to die at home than actually did so.[5] Over two thirds of patients who died in hospital would have preferred to die at home. However, later research by Hinton shows that preferences may change in the course of an illness. Preference for home care fell from 100% of patients and relatives to 54% of patients and 45% of relatives as illness progressed.[6] The growth of palliative care has not resulted in any fall in the proportion of patients dying in hospital. In fact the proportion of patients dying at home has fallen from a peak of 60% in the 1960s to 24% today. There may be more to learn from the successful and mainly home based palliative care services for patients with AIDS.

A recent executive letter from the NHS Executive stressed that health authorities should arrange access to appropriate palliative care and that they should develop a palliative care strategy.[7] They will be searching for ways of improving service. Fortunately, there is already evidence on how this might be done. Raftery *et al* have shown that better coordination of services can lead to substantial cost savings through reduced hospital admissions without loss of quality.[8] Patients receiving coordinated care spent fewer days in hospital and had fewer home visits: mean cost per patient was almost half that of controls (£4774 *v* £8034). Local projects in Newcastle and East Anglia have shown possible improvements in the organisation and role of general practitioners and the primary care team in palliative care.[9 10] For drug treatment there is still a long way to go in implementing the advice of the European working group on palliative care for ensuring effective use of morphine.[11] It says: "Concerns about addiction, excessive sedation, and respiratory depression have resulted in widespread avoidance or underdosing. Yet extensive, carefully documented clinical experience has shown these fears to be unfounded." Last year, a conference in London, organised by the National Council for Hospice and Specialist Palliative Care Services, set out some action points for a district strategy. These included partnership with voluntary groups, assessment of educational needs, and initiation of three year contracts to assure more local continuity.

The missing link is that of incentives. Palliative care involves great numbers of players, ranging from acute hospitals and specialist services through community trusts to general practitioners. The management task for care programmes needs to be defined and funded. Above all there is a need for a stronger response in primary care and community nursing. This could be a positive area for fundholding practices to develop collaboration. The role of specialist palliative care is likely to change, with much more stress on education and the development of joint programmes. There is a need to develop partnership with nursing homes to improve care for residents. The NHS can offer a more explicit and organised service to help people achieve a high quality of life in a longer final stage.

Palliative care has developed through a strong sense of specialist mission. It may well be difficult to share this mission with a wider audience, yet the gains in patients' quality of life would be great. Past investment in palliative care has created a valuable resource that is now local rather than exceptional, but there will be more pressure to demonstrate value for money. The challenge is how to use this resource so that all patients, including those with non-cancer diagnoses, can benefit from access to better care. In an era of financial constraints, new alliances are needed for shared care if the full promise of palliative care is to be realised.

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Domestic violence and pregnancy

Risk is greatest after delivery

Domestic violence is reported by up to one in four women in Britain[1] and represents a serious public health issue. The psychological and social consequences of domestic violence include alcohol and drug dependence, suicide attempts, depression, and post-traumatic stress disorder.[2 3] Pregnancy may increase the risk of violence,[4-7] and the pattern of assault may alter, with pregnant women being more likely to have multiple sites of injury and to be struck on the abdomen.[4-7] However, the risk of moderate to severe violence appears to be greatest in the postpartum period.[8]

Several studies have found that women attending accident and emergency departments with physical injuries due to domestic violence are more likely to be pregnant than women attending with accidental injuries.[4] In contrast, one study reported that pregnancy led to a decrease in domestic violence, with the result that the women may try to protect themselves by repeatedly getting pregnant.[6] Women may additionally be subjected to sexual abuse and assault,[9] raising the possibility that conception itself occurs as a result of rape. Victims of domestic violence seem significantly more likely to describe their pregnancy as unplanned and unwanted than women without such experiences.[10]

Between 11% and 41% of antenatal attenders in American studies report a history of domestic violence at some point in the past, and between 4% and 17% report domestic violence during the current pregnancy.[2 5 11 12] Estimates of prevalence vary according to the screening method used, the number of times the woman is questioned, and whether she is asked on repeated occasions.[8 13] The use of structured screening questions by staff significantly improves detection rates in a clinical population.[12 13]

The risks of domestic violence are particularly acute in pregnancy, where the health and safety of two potential victims are placed in jeopardy. Domestic violence is associated with increased rates of miscarriage, premature birth,[14] low birth weight, chorioamnionitis, fetal injury, and fetal death.[4 6 7 15] Increased drug and alcohol use, smoking, and suicide attempts in battered women are all potentially injurious to the developing fetus.[5 12 15] The fetus may be indirectly harmed by women being prevented from seeking or receiving proper antenatal or postpartum medical care by their violent partners.[10 12] Physical injuries to live fetuses include broken bones, stab wounds, and fetal death. Once the child is born, battered women are more likely to report child abuse or to fear it.[4]

Pregnant women are not routinely screened for the presence of domestic violence by health professionals, although standard inquiries are made about other risk factors. Paradoxically, recent changes in midwifery and obstetric practice designed to "empower" women and demedicalise childbirth may have reduced the possibility of effective intervention. The traditional refuge of woman-only space in antenatal wards and labour wards is disappearing. The milieu of the antenatal clinic is not particularly conducive to facilitating disclosure of domestic violence, which women find difficult, shameful, and risky. Men often accompany their partners to clinics and in labour, and hand held notes mean that confidential documentation is no longer in the safe keeping of the hospital.

Women may need protection from violence and intimidation by their partners, and it is important that there are provisions to accommodate this need. There should be greater awareness of the problem, improved identification techniques, and education about available social and legal interventions and the importance of liaison between agencies. More research is required on interventions that might reduce the risk of violence and offer women protection. Insensitive or judgmental responses by health professionals can easily compound the woman's sense of isolation and helplessness. Women are particularly vulnerable to domestic violence during pregnancy and the neonatal period. Rather than ignoring the issue, midwives, general practitioners, and obstetricians must develop clinical practices that recognise the risk and enhance the safety of women and their unborn children.

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Patently confused

Inconsistent policies undermine Europe's health, wealth, and intellectual property

The key goals of the European Union relate to preserving peace and increasing prosperity. Free trade—demanding the unhindered movement of goods and services across member states' boundaries—should, many theorists believe, contribute to these ends. But the transition away from nationally focused systems is proving slow and painful. This is not just for workers in enterprises who in the past were protected by local regulations. Broad public and business interests are also being harmed by inconsistencies between tax and allied regimes at the national level and the overall European drive for the free movement of goods. As a result, both public health and pharmaceutical research programmes are at risk of disruption.

An example of the problems arising from the uneasy balance between national and European Union policies is provided by licit and illicit trade in alcohol and tobacco. The movement across the English channel of large quantities of low taxed beer and cigarettes, ostensibly for personal consumption but often for resale in this country, is undermining British businesses. It also undermines Britain's health oriented fiscal policies.

A similar, if legal, trade is taking place in medicines. Drugs purchased in European Community countries, where factors such as state imposed price restraints have kept their costs low, are moved by "parallel traders" to other member states, where they can be relabelled and sold for more.

A recent European court of justice ruling (involving various parties but known as Merck *v* Primecrown) has confirmed that even in cases where a medicine is patented in some but not all member states it can still be traded in this way.[1] The accession of Spain and Portugal into the union now offers the prospect of continuing large increases in the volume of parallel imports of patented drugs from Iberian sources into countries such as Britain.[2] In essence this is because Spain and Portugal, with no substantive pharmaceutical research base of their own, have until recently had weak intellectual property arrangements. It paid them to "free ride."

Although patent law in both Spain and Portugal is now in line with that of other European Union states, there are many drug innovations for which reform has come too late. Consequently, products still in the process of entering the market are subject to low price copying by manufacturers that do not invest in research or in information and allied services for professionals or patients.

The argument of the European court of justice in its December 1996 Merck *v* Primecrown judgment—that innovative companies could protect their commercial interests by refusing to supply patented products in European Union countries where there is a parallel exporting hazard—seems to be not only impractical but ethically offensive. Innovative companies arguably have a moral responsibility to supply effective drugs as widely as possible, even if commercially they would like higher prices.

Patent protection is vital for the future success of Europe's drug industry.[3 4] Even though the problems relating to Spanish and Portuguese accession to the union will eventually work themselves out in the early 21st century, the expansion of the community to include new central and eastern European members could easily bring new threats to the integrity of intellectual property protection. And the fundamental problems associated with the parallel importing of drugs seem set to run indefinitely.

The ultimate solution, if the European project is to survive, may well depend on common taxation, common strategies for controlling costs of health care and drugs, and a common currency. But the prospect of any of these emerging is at best a distant one. For the foreseeable future, the European Union faces a stark choice between policies that encourage the free movement of drugs and other goods, whatever the social price (aimed at forcing the eventual alignment of national regulations), and approaches directed at supporting a strong and innovative industrial base. Those who want the latter may have to accept that this will require regulating the movement of drugs in the interests of both social equity (poorer countries cannot necessarily afford richer countries' drug prices) and business stability.

The European Commission has recently established two working groups to investigate the development of a single pharmaceutical market. This is a welcome step. But members of these groups should be aware that Europe may be making the wrong choices in this area of drug policy. Professionals with an interest in ensuring high standards of care have a duty to be aware of the chaotic pharmaceutical bazaar that current policies have created, and the range of costs and perverse incentives it entails. And every European patient has a right to ask whether the European system that it is emerging is one that has been rationally chosen as safe, economic, and in our long term interest.

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