proteins. These proteins, expressed in all tumours, inactivate the cellular tumour suppressor gene products p53 and pRb, causing uncontrolled cellular proliferation. Early genes are necessary but not sufficient for malignant conversion. Modification of early gene regulation by host cells seems to be required for malignant progression.⁴ Cervical cancers associated with human papillomavirus often exhibit a loss or reduction of allelic expression of critical major histocompatibility complex class I molecules. Down regulation of these molecules, which are intimately involved in recognition and surface presentation of antigens, may explain why some cancers escape cell mediated immune surveillance.⁴ After infection, development of dysplasia and cancer is not constant and ordinarily occurs over several years.

Recently, the ability to purify recombinant virus-like particles, as well as capsid proteins of selected human papillomaviruses that mimic conformational and neutralising epitopes of native virions, has fostered an explosion of applications.⁶⁻⁹ Detailed seroepidemiological studies using these proteins, like that of Lehtinen *et al*,² can now be accomplished. These data confirm the role that selected mucosotropic anogenital human papillomavirus types have in the aetiology of cervical cancer.¹⁰ Beagle dogs immunised with virus-like particles of canine oral papillomavirus are completely protected by neutralising antibodies from developing mucosal papillomas.¹¹ This animal model clearly suggests that virus-like particles of human papillomavirus are candidates for prophylactic subunit vaccines, since they induce protective antibodies in the host and contain no potentially oncogenic viral DNA. Finally, Feltkamp *et al* reported that injection of peptide fragments of early genes into mice induced protective cell mediated immune responses against formation of tumours.¹² Stimulation of cell mediated immunity is an attractive therapeutic strategy to augment tumour rejection and regression.

As we continue to unravel the cellular and molecular mechanisms responsible for carcinogenesis and its relation to infection with human papillomavirus, targeted strategies for

prevention and treatment of disease will become reality. These strategies may affect gene regulation or protein expression or they may exploit humoral and cell mediated immunity to effect prevention and rejection of tumours.

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Case management: a dubious practice

Underevaluated and ineffective, but now government policy

American psychiatrists visiting Britain will experience a sense of déjà vu when they encounter the recent clutch of community care "initiatives." They will soon spot that "care management" and the "care programme approach" are no more than a rehash of "case management," an old American idea. From politeness they will probably refrain from telling their hosts that there is little reason to believe that case management works.

Case management arose in the United States in response to the dispersal of psychiatric and social care that followed the closure of large mental hospitals. The basic idea was that a designated person, the "case manager," would take special responsibility for a "client" in the community. The case manager would assess the client's needs and ensure, through a care plan, that suitable services were provided to meet them. The case manager would also monitor the provision of these services and maintain contact with the client.¹

From the beginning the literature on "case management" has been bedevilled by a tendency to lump two different approaches under one name. The first approach could be described as "standard" case management. This is a low

intensity approach in which case managers offer a largely "office based" service, brokering interventions from other agencies. Each case manager has a case load of 30 or more clients whom they see infrequently. The standard approach has several variations in which case managers take a more therapeutic role and carry smaller case loads. Yet even these "clinical" case managers tend to offer fairly low intensity intervention.

The second approach lumped under the term "case management" is more properly described as "assertive community treatment." This bears little resemblance to "standard" case management. The assertive community treatment approach is provided by a dedicated multidisciplinary team of mental health professionals that generally includes a psychiatrist. The overall patient-staff ratio is low (about 10:1) and the level of face to face contact is high. The importance of individual case loads is played down; instead team members work with patients as and when their particular skills are required. The team concentrates on avoiding hospital admission and developing patients' independent living skills. Assertive efforts are made to retain contact with patients.²

There are at least 13 randomised controlled trials of assertive community treatment in the world literature, 12 of which have found the approach beneficial when compared with routine management. There are at least nine randomised controlled trials of standard case management and two well designed non-randomised controlled studies, all but one of which have largely negative findings. Curiously, the whole thrust of community care policy in Britain is towards the implementation of standard case management by another name.

Case management arrived in Britain in the late 1980s, giving rise to two parallel but closely related developments: social services "care management" and the health services "care programme approach." Social services care management was the first to take off, after the publication of the Griffiths report on community care.³ This report recommended that case management (provided by social services) should be at the heart of community care for severely mentally ill people. Griffiths had a particular eye on the brokerage aspect of case management, seeing it as an efficient means of providing "tailored" packages of care. After the Griffiths report a number of confusing and disruptive "innovations" ensued. In some areas social workers were withdrawn from clinical duties to act as "purchasers of care," plunging existing multidisciplinary teams into chaos.⁴ In other areas, social services "care management" teams were set up to provide clinical care in parallel with existing mental health services. Such evaluations of these teams as took place provided little evidence of efficacy, leaving social services care management in limbo.^{5,6}

Meanwhile the case management idea was being imposed on the mental health services in the form of the "care program approach." This was intended to run in tandem with care management, though how or why this should happen has

never been clarified. Originally the approach was reserved for the most severely ill patients, to whom the mental health services were required to appoint "key workers" (or case managers). The patients were to receive an assessment of need, a written care plan, and regular reviews organised by the key worker. It is possible to see how, with proper funding and guidance, this approach might have evolved into an approximation to assertive community treatment. In practice, the care programme approach has meant standard case management for all, through a combination of lack of funding, mushrooming paperwork, and its extension to all psychiatric patients. The care programme approach has never been fully evaluated, but a partial evaluation in a recent randomised controlled trial produced disturbing findings: a doubling of hospital admission rates for the care programme group.⁷

Case management, a practice with little justification, has displayed an astounding ability to flourish in the age of evidence based medicine. There is a simple explanation for case management's immunity to scientific analysis: in Britain it is no longer just an intervention, but a government policy.

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Antenatal care on trial

Pregnant women don't like minimalist packages

See pp 546, 554

There has been a growing worry among health professionals that much of antenatal care has become an unthinking ritual with few tangible returns and much inconvenience for pregnant women.¹ The scheduling of clinic visits was inherited from the 1920s, when the risks from pregnancy were quite different. Many believe that, today, we have too many antenatal visits to see too many different professionals in too many settings.

Several bodies have advocated possible improvements, including smaller "packages" of antenatal care (in which each visit has an explicit clinical purpose) and different mixes of contribution by general practitioners, midwives, and obstetricians. Obstetricians disagree as to whether they should, or should not, be involved in the antenatal care of healthy women with normal pregnancies.^{2,3}

There is, however, little quantitative evidence of high scientific quality to inform these debates. Randomised trials have assessed the effects of combined antenatal and intrapartum care by midwives and of domiciliary care for women with complications, but until now there have been only two randomised trials of different patterns specifically of antenatal care^{4,5}; both were small. Two additional and much larger trials are published in today's issue of the *BMJ*: the Scottish trial by Tucker *et al* (p 554) compares routine

antenatal care delivered by general practitioners and midwives with conventional "shared care" routinely involving specialist obstetricians,⁶ and the London trial by Sikorski *et al* (p 546) compares the traditional British antenatal schedule of visits with a reduced package.⁷ Both reports make important contributions to the debate.

Antenatal care of course aims to provide multidimensional benefits that include clinical improvements, education, and psychological and social support when required. Substantive adverse clinical outcomes are rare and neither trial is of sufficient size and power to draw important conclusions about the effects of innovative systems of antenatal care on clinical outcome. Interestingly, though, the Scottish trial found fewer women with proteinuric pre-eclampsia in the group cared for by general practitioners and midwives; it is important to establish whether this is due to chance, or decreased incidence, or failure of detection. The effects of fewer antenatal visits on important clinical outcomes may be illuminated by a completed but as yet unpublished trial from Zimbabwe.

The new trials also provide important information about the views of pregnant women on the studied innovations. In the London trial, women in the "fewer visits" group expressed significant dissatisfaction: they were more likely to