The resource-use costs were then incorporated into a comparison of the costs and outcomes of the current screening programme in the Trent region with that of a hypothetical scenario; one which assumes that screening had not been introduced and that cancers had been detected by other methods.

Results and Discussion: Audited at four years, stage IV cancers emerge as being more expensive to treat than those at earlier stages (stage IV; £6590 (£5064), stage I; £3569 (£2555), stage II; £3996 (£2004), stage III; £3917 (£3132) although this difference fails to achieve significance when expected lifetime costs are considered (stage IV; £6590, stage I;. £4652). The inclusion of the treatment cost estimates in the model of the screening programme in the Trent region indicates that screening may actually increase expected treatment costs, although only by a marginal amount (0.3 per cent). Thus although screening entails an improvement in the stage distribution at diagnosis, the expected benefits of reducing the numbers of late-stage patients who consume relatively large amounts of expensive palliation resources are counter-balanced by an increased proportion of early-stage patients consuming more surgical, radiotherapy and follow-up resources. However, the model also suggests that the cost-effectiveness ratio of breast cancer screening in the UK might actually be better than had originally been thought. Translated into 1991 values, the basic cost per life-year estimate from the Forrest Report becomes £4,500. Employing a Forrest-type cost-effectiveness methodology with the Trent data, we have obtained a base-line figure some 22 per cent lower; £3522.

Wolstenholme J, Trent Institute For Health Services Research, Room B39, Medical School, QMC, Nottingham NG7 2UH, UK

OP32. The cost of cervical cancer: Implications for screening

Wolstenholme J[1], Whynes D[2]
[1]Trent Institute for Health Services Research, University of Nottingham, UK; [2]Department of Economics, University of Nottingham, UK

Background: Cancer of the cervix is the tenth most common female cancer accounting for 2.9% of all new registrations in the Trent region of the UK. The lifetime risk of developing the disease is approximately 1 in 125[1]. In contrast with breast cancer screening which detects early invasive cancers, the screening programme for cervical cancer targets pre-invasive cancers. This ability to detect pre-invasive cancer combined with the increased efficiency of the screening programme since the late 1980's has led to a reduction in the incidence of invasive and an increase in the incidence of pre-invasive carcinoma of the cervix. What this effect has had on the resource-use and cost of diagnosis, treatment and follow up of carcinoma of the cervix is still unknown.

Methods: A detailed cost audit was conducted using the medical notes of all patients diagnosed with invasive cervical cancer in the Trent region of the UK in 1990 and followed for a minimum of five years.

From individual patient records we developed stage-specific algorithms of diagnostic and therapeutic cost-entailing events. These resource use algorithms were combined with unit cost estimates to obtain the mean costs of diagnosis, treatment and follow-up by stage at diagnosis over the five year period. To assess the implication on resource use of the increased efficiency of the screening programme during the late 1980's, the average cost per disease episode of pre-invasive carcinoma of the cervix must be estimated. A database of all patients diagnosed since 1990 with pre-invasive cervical cancer at Queens' Medical Centre, Nottingham has been used to elicit the resource use information for costing purposes.

Results and Discussion: Audited at five years, preliminary cost results for invasive carcinoma of the cervix have shown that stage I cancers are significantly cheaper to diagnose, treat and follow-up than stage II, 111 and IV cancers. The average cost per disease episode for stage I cancers is approximately £7,000 (1990 £ sterling) compared with the average cost per disease episode for stage II - IV cancers of approximately £1 1,000.

The average cost of pre-invasive carcinoma of the cervix is yet to be determined, as the research is still ongoing. These results will be presented at the conference in November.

These cost results for pre-invasive and invasive carcinoma of the cervix combined with screening programme information and survival data can also be used to model the cost-effectiveness of cervical cancer screening in the UK.

Wolstenholme J, Trent Institute For Health Services Research, Room B39, Medical School, QMC, Nottingham NG7 2UH, UK

[1]First Report of Trent Cancer Registry 1996/97

OP33. Determining the importance of specific symptoms for the economic evaluation of advanced prostate cancer therapies

Yabroff KR[1], Barofsky I[2], Pearson A[1], Rothman M[3]
[1]MEDTAP International, Bethesda, MD, USA, [2]Johns Hopkins University-Bayview, Baltimore, MD, USA, [3]Janssen Research Foundation, Titusville, NJ, USA

Cost-utility analyses integrate the economic impact of disease and its treatment with patient valuation of health states. Utility assessment in prostate cancer has focused on early stage disease where potential side effects of therapy are impotence or incontinence and potential benefit is improved long-term survival. Little attention has been given to advanced prostate cancer where patients having failed hormonal therapy experience many adverse effects and treatment offers only small improvement in survival. Here qualitative assessment may have a tremendous impact on the economic analysis.

We interviewed 80 advanced prostate cancer patients as part of a cost-utility analysis of alternative therapies. Subjects evaluated between eight and twelve descriptive health states with a visual analog scale as part of a computer-assisted utility assessment package. Three "core" health states provided a contextual description of advanced prostate cancer using average levels of fatigue, physical functioning and emotional state. These states corresponded to an asymptomatic, a less functional, and a rapidly progressing advanced prostate cancer patient.

Subjects also evaluated between four and eight supplemental states, which combined one of the core states with an advanced prostate cancer symptom or side effect of therapy. Subject valuations of symptoms and side effects were assessed using paired t-tests comparing the supplemental state to the appropriate core health state.

The mean value (SE) for the asymptomatic health state was 81.1 (1.27); 60.8 for the less functional health state; and 30.7 (1.76) for the rapidly progressing health state. When evaluated in the context of the asymptomatic health state, subjects indicated that PSA progression, constipation, nausea and vomiting, and diarrhea would result in an additional decrement in their overall well-being ($p<0.05$).

When evaluated with the more symptomatic health state, subjects indicated that constipation, nausea and vomiting, hot flushes, diarrhea, bone pain or cachexia would result in an additional decrement in utility ($p <0.05$). Alopecia, gynecomastia, urinary complications, brittle nails, and skin complications were not judged to have a significant impact on utility in the asymptomatic or the symptomatic health state.

Three symptoms of disease were evaluated with the rapidly progressing health state. Cachexia and constipation were judged to result in an additional decrement in utility ($p<0.05$) while the addition of urinary complications was not significant.

The three core health states resulted in significantly different patient generated values indicating qualitative differences within advanced prostate cancer. Specific symptoms or side effects of treatment were associated with additional decreases in utility. Constipation, nausea and vomiting, diarrhea, cachexia, and bone pain were described as being consistently worse than the core health state in at least two of the three health states. Inclusion of patient-based assessment of health states will lead to a more meaningful economic evaluation of advanced prostate cancer therapy.

Yabroff, KR, MEDTAP International, 7101 Wisconsin Ave, Suite 600, Bethesda, MD 20814, USA