practice research report

A review comparing the effectiveness of nurse-led follow up for cancer with conventional care

An outline of the key findings of a systematic review of nurse-led follow up for cancer compared with conventional follow up, and implications for practice

The role of the specialist nurse in cancer care has evolved over the last decade; clinical nurse specialists and advanced practice nurses have a greater therapeutic role and additional clinical experience (Willard and Luker, 2007; Jones, 2005). Nurse-led follow up and other alternative models, such as telephone and patient initiated follow up, are increasingly being used to reduce the workload of outpatient clinics.

SYSTEMATIC REVIEW
Our recently published systematic review, funded by Cancer Research UK, compared the effectiveness and cost-effectiveness of nurse-led follow up of patients with cancer with conventional doctor-led follow up (Lewis et al, 2009a). It also examined patients’ and healthcare professionals’ views of cancer follow up, irrespective of provider or setting (Lewis et al, 2009b).

The review was conducted in line with guidelines in the NHS Centre for Reviews and Dissemination (2001) Report 4. We carried out comprehensive literature searches, which included: 19 electronic databases (from inception until February 2007); various online trial registries and conference proceedings; and bibliographies of included studies.

We included comparative studies and economic evaluations of nurse-led versus doctor-led follow up, as well as qualitative studies that examined patients’ and healthcare professionals’ views of cancer follow up. However, studies comparing different types of nurse-led follow up were not included.

The review considered all cancer sites. The studies’ quality included in the review was assessed using a predefined checklist.

RESULTS
Included studies
Seven comparative studies of nurse-led follow up were identified, but three were reported only as abstracts, and the lack of information on the methodology and results precluded their inclusion in the analyses. The remaining four studies were all randomised controlled trials (RCTs). Two, which were of moderate quality, examined patient initiated follow up for breast cancer (Koinberg et al, 2004; Brown et al, 2002). Two examined telephone based follow up: one was a well conducted study of lung cancer (Moore et al, 2002) and one was a poorly conducted study for prostate cancer (Helgesen et al, 2000). The findings of individual studies were generally poorly reported.

Survival, recurrence and psychological morbidity
There were no statistically significant differences between the intervention groups in any of the included studies for survival, recurrence rates and psychological morbidity. Nurses, using telephone based follow up for lung cancer, recorded symptoms sooner than doctors, but this did not translate into a difference in progression free survival.

Health-related quality of life
Two studies examined health-related quality of life (HRQOL). In the study of telephone based follow up for lung cancer, patients in the nurse-led follow up group had less dyspnoea at three months and better emotional functioning and less neuropathy at 12 months than those in the doctor-led follow up group.

However, the prognoses of included patients were extremely poor and only 55 out of 203 (27 per cent) were included in the analysis at 12 months. The small sample size and the large number of HRQOL items (14) that were considered on an individual basis at three different follow up periods (three, six and 12 months) mean that the findings could have occurred by chance.

In a study of breast cancer follow up, no statistically significant difference was found between groups for HRQOL.
**Patient satisfaction**

Two studies (one poor and one well conducted) showed a statistically significant difference between groups for patient satisfaction, while the remaining two showed no significant difference between groups.

Patients with lung cancer were more satisfied with nurse-led telephone follow up than routine hospital follow up, and more patients with nurse-led follow up were able to die at home rather than in hospital or a hospice. Patients with breast cancer thought that patient initiated nurse-led follow up was convenient, but valued the reassurance provided by routine hospital follow up.

**Resource use and costs**

There were a few differences between the groups for resource use. In one study mammography use was higher in the patient initiated group. In a second study of telephone follow up (lung cancer) the use of radiographs and radiology was higher in the nurse group, but the number of consultations was lower than with conventional follow up.

There was a tendency for the cost of nurse-led follow up – when taking into account staff costs, not just tests and procedures – to be less than that of conventional follow up (one study), but no statistical analyses were carried out.

**OTHER RELATED STUDIES**

The final update searches for the systematic review were conducted in February 2007, and two relevant research studies have since been published.

One was an equivalence trial comparing conventional doctor-led follow up with telephone follow up by specialist nurses after treatment for breast cancer; all patients continued to receive routine mammography (Beaver et al, 2009).

The structured telephone intervention (30 minute consultation) was aimed primarily at meeting patients’ information needs, and the main outcome of interest was anxiety (hospital appointments lasted approximately 10 minutes). This was a well conducted trial which included 374 patients, with low to moderate risk of recurrence, who were followed up for a mean of 24 months.

The mean state-trait anxiety inventory scores for patients who received telephone follow up were found to be statistically equivalent to those of patients who received routine hospital contact and clinical examinations, although there was not much improvement in mean scores for either group during the trial.

Those in the telephone group reported significantly greater satisfaction with the information they received and higher levels of helpfulness in the way their concerns were dealt with than those in the conventional follow up group. There was no difference between the groups for patients’ information needs, which reduced over time in both groups.

There was also no statistically significant difference between the groups for the number of investigations ordered or time to detection of recurrence (equivalence was only tested for anxiety).

The second study was an RCT comparing conventional doctor-led follow up with nurse-led follow up using home visits for patients who had recently undergone surgical treatment for oesophageal cancer (Verschuur et al, 2009). The main outcome was health-related quality of life. This study was also well conducted and included 109 patients who were randomised three weeks after hospital discharge and followed up for 13 months.

Although quality of life improved during follow up for all patients, there was no statistically significant difference between the groups. There was also no significant difference for patient satisfaction, despite specialist nurses spending more time with patients (median length of visit was 43 minutes for nurse-led follow up and 11 minutes for doctor-led follow up).

**IMPLICATIONS FOR PRACTICE**

Although none of the studies directly compared follow up by nurses in outpatient clinics with doctor-led clinics, they did evaluate alternatives to routine hospital follow up, such as patient initiated and telephone follow up, which could be a means of reducing workload for outpatient clinics.

However, only three studies included a comparison of resource use and two of costs (neither study evaluated cost-effectiveness properly).

In terms of effectiveness, the overall findings showed that nurse-led follow up might be feasible, as none of the studies showed any statistically significant adverse effects of nurse-led follow up in terms of survival, time to detection of recurrence, psychological morbidity or quality of life.

However, non-statistically significant findings do not necessarily translate to equivalence, and could be due to an inadequate sample size, especially for outcomes that are unlikely to occur frequently during the study such as death or recurrence.

Patients who received nurse-led telephone follow up for lung cancer had better outcomes for some quality of life items (less dyspnoea at three months and better emotional functioning and less peripheral neuropathy at 12 months) compared with doctor-led follow up. However, the care provided in this study was more akin to palliative than follow up care.

Qualitative studies have shown that patients find routine follow up reassuring, especially in alleviating fears of recurrence, and that they value the psychosocial support it provides (Lewis et al, 2009b). Although they highly valued the expertise of hospital specialists and the quick access to tests that routine hospital follow up provides, they thought time, emotional support and continuity of care were sometimes lacking. Patients also reported having unmet information needs, which they believed would help them cope and be more involved in their care.

Nurse-led follow up could potentially result in better continuity of care and the availability of more time to provide psychosocial support and address patients’ information needs. Compared with conventional hospital follow up, patients who received nurse-led telephone follow up reported greater overall satisfaction (lung cancer), greater satisfaction with the information they received (breast cancer) and higher levels of helpfulness in the way their concerns were dealt with (breast cancer), although most studies found no statistically significant difference between groups for patient satisfaction.

Careful consideration is needed when transferring the findings of included studies to other settings, such as different cancer sites, the use of alternative protocols or nurses’ remit. Nurse-led follow up is a complex intervention made up of many
In a third study, the aim of nurse-led telephone follow up for lung cancer was to provide information and support for patients and coordinate input from other agencies and services (Moore et al., 2002). Most of the studies included specialist nurses, who worked as part of a team, and were not responsible for diagnosis and prescribing. Changing some of these elements of nurse-led follow up could result in different findings.

**CONCLUSION**

Cancer follow up by specialist nurses appears to be feasible but new initiatives should incorporate an evaluation of patient outcomes. Patients appeared to be satisfied with nurse-led follow up, and patient initiated or telephone follow-up could provide alternatives to conventional care.

Forgoing routine hospital visits and clinical examinations may not lead to increased patient anxiety, as those who received telephone follow up experienced the same level of anxiety as those who attended a regular clinic.

However, more well conducted research is needed before equivalence to doctor led follow up can be assured in terms of survival, recurrence, patient wellbeing and cost-effectiveness.

This article is based on original research published in the *Journal of Advanced Nursing* (Lewis et al., 2009a) and the *British Journal of General Practice* (Lewis et al., 2009b).

**REFERENCES**


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