**Institution: The University of Edinburgh**

**Unit of Assessment: 4**

**Title of case study: E: Evidence-based identification and cost-effective treatment of depression in cancer patients**

**1. Summary of the impact** (indicative maximum 100 words)

**Impact:** Improved depression care for people with cancer.

**Significance:** Assessment of emotional distress and evidence-based intervention to manage depression has a direct effect on quality of life of cancer patients. It may also reduce suicide attempts among them.

**Beneficiaries:** Cancer patients, NHS and healthcare delivery organisations.

**Attribution:** The work was led by Sharpe (UoE), with UoE Cancer Research Centre colleagues and collaborators in Manchester and London.

**Reach:** International; this work directly affected NHS practices and clinical guidelines in Europe and North America. It also stimulated international debate and new research into psychological aspects of living with cancer.

**2. Underpinning research** (indicative maximum 500 words)

Over 300,000 patients a year are diagnosed with cancer in the UK. As treatments become more effective there are increasing numbers of patients living after a diagnosis of cancer (estimates are around 2 million), many of whom are not cured but living with disease that requires active therapy. Symptoms of depression are known to be common in cancer patients and to affect quality of life as well as to have possible prognostic significance. Professor Michael Sharpe (Senior Lecturer in Psychiatry, UoE, 1997–2011; now Honorary Professor) and colleagues at the Edinburgh Cancer Research Centre (including Vanessa Strong (Research Nurse, UoE, 1999–2007), with collaborators at Christie Hospital in Manchester and St Thomas' Hospital in London, were the first to prospectively assess the prevalence of major depression in a broad range of cancer patients, and then to develop an evidence-based intervention to manage these patients [3.1, 3.2].

Sharpe, with Strong and Dr Lucy Wall (Honorary Senior Lecturer, UoE, 2005–present), conducted a survey of outpatients attending selected clinics of a regional cancer centre in Edinburgh to estimate the prevalence of clinically significant emotional distress and depression in patients attending a cancer outpatient department, and to determine the associations between distress and demographic and clinical variables [3.3]. They found that age <65 years, female gender and active disease, but not cancer diagnosis, were the independent predictors of clinically significant emotional distress. The authors concluded that services to treat distress in cancer patients should be organised to target patients by characteristics other than their cancer diagnosis (2007) [3.3]. They also conducted a large study to analyse the prevalence of suicidal thoughts among cancer patients and the linkage between such thoughts and emotional distress (2008) [3.4].

In parallel, using the managed-care model of depression of Kurt Kroenke, they developed and piloted an intervention for depression in cancer patients (2004) [3.5]. The intervention was delivered by a specially trained oncology nurse and embedded within the care received in the oncology department. A randomised controlled trial (Symptom Management Research Trial, SMaRT-1) was then undertaken to determine the potential for this intervention to benefit patients [3.6]. The trial recruited 200 outpatients at the Edinburgh Cancer Centre with a predicted cancer-specific prognosis of greater than 6 months and major depressive disorder (identified by screening). The primary outcome was the difference in mean score on the self-reported Symptom Checklist-20 depression scale (range 0 to 4) at 3 months after randomisation. For 196 patients for

whom the data at 3 months were available, the adjusted difference in mean Symptom Checklist-20 depression score, between those who received the intervention and those who did not, was 0.34 (95% confidence interval 0.13–0.55). This statistically significant treatment effect was sustained at 6 and 12 months. The intervention also improved anxiety and fatigue but not pain or physical functioning. It cost an additional £5278 per quality-adjusted life-year gained [3.6].

**3. References to the research** (indicative maximum of six references)

3.1 Sharpe M, Strong V, Allen K, et al. Major depression in outpatients attending a regional cancer centre: screening and unmet treatment needs. Br J Cancer. 2004;90:314–20. DOI:10.1038/sj.bjc.6601578.

3.2 Sharpe M, Strong V, Allen K, et al. Management of major depression in outpatients attending a cancer centre: a preliminary evaluation of a multicomponent cancer nurse-delivered intervention. Br J Cancer. 2004;90:310–3. DOI: 10.1038/sj.bjc.6601546.

3.3 Strong V, Waters R, Hibberd C,…Sharpe M. Emotional distress in cancer patients: the Edinburgh Cancer Centre symptom study. Br J Cancer. 2007;96:868–74. DOI: doi:10.1038/sj.bjc.6603626.

3.4 Walker J, Waters R, Murray G,…Sharpe M. Better off dead: suicidal thoughts in cancer patients. J Clin Oncol. 2008;26:4725–30. DOI: 10.1200/JCO.2007.11.8844.

3.5 Strong V, Sharpe M, Cull A, et al. Can oncology nurses treat depression? A pilot project. J Adv Nurs. 2004;46:542–8. DOI: 10.1111/j.1365-2648.2004.03028.x.

3.6 Strong V, Waters R, Hibberd C,…Sharpe M. Management of depression for people with cancer (SMaRT oncology 1): a randomised trial. Lancet. 2008;372:40–8. DOI: 10.1016/S0140-6736(08)60991-5.

**4. Details of the impact** (indicative maximum 750 words)

**Impact on health policy**

In 2010, the National Institute for Health and Care Excellence (NICE) published clinical practice guideline CG91 “Depression in adults with a chronic physical health problem” [5.1]. The SMaRT-1 clinical trial is referenced several times in the guideline as evidence for the efficacy of a collaborative-care model of depression management in a UK population. The findings from Sharpe’s work are also placed in the “Recommended for practice” section of the evidence-based practice guidelines and recommendations on depression management published in 2008 by the US-based Oncology Nursing Society (ONS) [5.2]. ONS is a professional organisation of over 35,000 registered nurses and healthcare providers dedicated to excellence in patient care, education, research, and administration in oncology nursing, which actively promotes evidence-based implementation of practice to cancer care nurses internationally. Other important guidelines and policy-setting-documents that refer to the SMaRT-1 trial include: National Comprehensive Cancer Network (NCCN) clinical practice guidelines in oncology on distress management in the USA (version 2, 2013) [5.3]; “The management of depression in palliative care” - European clinical guidelines developed on behalf of the European Palliative Care Research Collaborative in 2010 [5.4]; and “Psychosocial health care for cancer patients and their families: adaptation and internal and external review.”- a quality initiative of the Cancer Care Ontario (Canada) (2010) [5.5].

The initial publication of the results of SMaRT-1 trial increased awareness about depression and suicidal thoughts among cancer patients [5.6]. A recent review of depression screening and management in cancer patients published by an international team identified this trial as the only identifiable high-quality controlled trial of depression management in cancer patients [5.7].

**Impact on health and welfare**

Many seriously ill patients with cancer have access to potentially lethal medication that they could take in overdose. Such acts are recognised as being under reported (why go looking for trouble? why put the family through additional trauma?) by the certifying physician, who can easily cite the underlying malignancy as the cause of death. It has been reported in the US that 19 out of every

1,000 males diagnosed with cancer and four out of every 1,000 female cancer patients take their own lives. In general, 15–50% of cancer patients display depressive thoughts and symptoms, and 5–20% meet diagnostic criteria for major depressive disorder [5.8]. Left untreated, depression in seriously ill patients can be associated with increased physical symptoms, suicidal thoughts, worsened quality of life and emotional distress. Moreover, depression can impair the patient's interaction with family during a pivotal time in which patients may be saying goodbye, thank you, or planning for their death. Depressive symptoms can even erode the construct of patient autonomy by interfering with one's ability to engage in medical decisions and attain a sense of meaning from their illness [5.8]. The intervention scheme developed by Sharpe and colleagues contributes to improved quality of life and potentially prevents suicides among cancer patients, although for the reasons stated above the exact numbers of patients assisted is impossible to assess.

**Impact on health economics**

The NICE costing statements "Depression: the treatment and management of depression in adults (update)" and "Depression in adults with a chronic physical health problem", which describe the economic consequences of implementation of NICE guidelines CG90 and CG91 (the latter of which was directly influenced by the SMaRT-1 trial), states that "the indirect costs of depression far outweigh the health service costs, therefore any additional costs incurred in the health service are likely to be more than offset by savings and benefits to the wider economy" [5.9].

Importantly, under the national UK Quality and Outcomes framework (part of the General Medical Services contract from the Department of Health, which was heavily influenced by the NICE guidelines), General Practitioners are now financially rewarded for performing a cancer care review, which includes assessment of patients' social support networks and emotional needs [5.10].

**5. Sources to corroborate the impact** (indicative maximum of 10 references)

5.1 NICE Clinical Guideline 91 (2009) Depression in adults with a chronic physical health problem. http://www.nice.org.uk/nicemedia/live/12327/45913/45913.pdf *[refers to SMaRT-1 trial (as "STRONG2008") on pages 113, 118 and 122.]*

5.2 Fulcher C, Badger T, Gunter A, et al. Putting evidence into practice: interventions for depression. Clin J Oncol Nurs. 2008;12:131–40. DOI: 10.1188/08.CJON.131-140. *[US Oncology Nursing Society guidelines.]*

5.3 NCCN Clinical Practice Guidelines in Oncology. Distress Management. Version 2, 2013. *[Available on request.]*

5.4 Rayner L, Higginson I, Price A, Hotopf M. 2010. The management of depression in palliative care: European Clinical Guidelines. London: Department of Palliative Care, Policy & Rehabilitation / European Palliative Care Research Collaborative. http://www.epcrc.org/getpublication2.php?id=6VW4bQY9JujQVGSItDs6

5.5 Turnbull G, Baldassarre F, Brown J, et al. (2010). Psychosocial health care for cancer patients and their families: adaptation and internal and external review. Cancer Care Ontario. https://www.cancercare.on.ca/common/pages/UserFile.aspx?fileId=83597.

5.6 Quill T. Suicidal thoughts and actions in cancer patients: the time for exploration is now. J Clin Oncol. 2008:26;4705–7. DOI: 10.1200/JCO.2008.18.3129.

5.7 Meijer A, Roseman M, Milette K, et al. Depression screening and patient outcomes in cancer: a systematic review. PLoS One. 2011:6;e27181. DOI: 10.1371/journal.pone.0027181.

5.8 Marks S, Heinrich T. Assessing and treating depression in palliative care patients. Curr Psychiatr. 2013;12:35–40. http://www.currentpsychiatry.com/topics/depressive-disorders/article/assessing-and-treating-

depression-in-palliative-care-patients/c3ec9466fd10c1cbb97e9dfd1c511c42.html

5.9 NICE Costing statement (2009) “Depression: the treatment and management of depression in adults (update)” and “Depression in adults with a chronic physical health problem: treatment and management”. http://www.nccmh.org.uk/downloads/DCHP/CG91CostStatement.pdf

5.10 NHS England, BMA, NHS Employers (2013). 2013/14 general medical services (GMS) contract quality and outcomes framework (QOF) Guidance for GMS contract 2013/14. http://www.nhsemployers.org/Aboutus/Publications/Documents/qof-2013-14.pdf