

YANKEE DOODLING Douglas Kamerow

Screening for early detection of lung cancer

At long last, something that makes a difference?

I give an annual lecture to first year medical students on what makes a good screening test. One of the hardest points to get across is that early detection does not necessarily lead to improved outcomes. Why isn't it the case, they ask, that finding cancer early is not always better than finding it later? It's so counterintuitive.

To answer I cite the randomised controlled trials (RCTs) done in the 1970s that tested chest x ray pictures and sputum cytology as screening tests for lung cancer. Despite the fact that the screening tests found many asymptomatic lung cancers, none of the trials decreased mortality rates among the smokers who were screened, in comparison with controls. We would never have known this without RCTs, given that early detection nicely increased "survival times" (but really just the length of time that patients knew they had the disease).

RCTs have always been seen as the gold standard in evaluating screening tests because they eliminate many of the biases that taint uncontrolled observational studies. As a result of the RCTs of lung cancer screening, it was with some confidence that the US Preventive Services Task Force and other evidence based authorities recommended against using chest radiography to screen for lung cancer. As opposed to many other preventive services, here we had direct evidence on whether a screening test worked or not. A more recent analysis of a huge screening trial for prostate, lung, and colorectal cancer has confirmed that screening chest radiography doesn't effectively reduce lung cancer mortality.

But lung cancer remains a critical problem. It is the leading cause of cancer deaths among men and (since they started smoking more) women. It is estimated that more than 157 000 Americans will die from lung cancer this year. It kills more people each year than do cancers of the breast, prostate, and colon combined. Unlike

survival from most other cancers, lung cancer survival has seen no significant improvement over the past 30 years. Up to 85% of patients with lung cancer die from their disease.

The good news is that this may be about to change.

On 4 November the US National Cancer Institute announced that it had terminated its national lung screening trial (NLST) early because of positive results. The number of deaths from lung cancer was 20% fewer among heavy smokers who were screened annually three times with low dose helical computed tomography (CT) than among those screened with conventional chest radiography. This RCT was huge news in the United States, making the front pages of national newspapers despite being released just two days after our elections.

Hints about the effectiveness of CT screening for lung cancer have been appearing over the past 10 years, during which several single arm CT screening studies were published. Although their study designs did not permit a reliable assessment of the effect of the screening on cancer mortality, it was clearly a promising technology. CT's cross sectional views reduce the problem of overlying structures obscuring details, which plagues regular chest radiographs. Their improved contrast allows more subtle abnormalities to be identified. Treatments may have improved in recent years as well, although patients in the NLST trial did not get specialised care; they were referred for routine treatment once their cancers were diagnosed.

To their credit, everyone connected with the press release was careful to add caveats to the big news. This was just a preliminary press report, they said. The final analyses had not yet been done, let alone published in peer reviewed journals. The study applied only to heavy (30 or more packs a



“It is great news indeed to have even a preliminary report of a large, well conducted RCT of a screening test for the leading cause of cancer deaths that led to a significant reduction in mortality”



© bmj.com

All of Douglas Kamerow's columns dating back to 2007 are available online

year) smokers aged 55 or older. And it seemed to be required to add that smoking cessation is still the most effective and proved way to prevent lung cancer. How refreshing!

There are indeed plenty of questions left to ask. Around a quarter of the patients enrolled in the trial had a positive scan result, the vast majority of which were false positives. Given that heavy smokers will have all kinds of non-cancerous changes in their lungs that will be picked up by CT, the costs of screening in terms of worry, follow-up testing, and side effects will be high. At up to \$300 (£190; €220) a scan, the dollar costs will be high as well. Then there is the radiation exposure. Though they produce only 25% of the radiation of a diagnostic scan, low dose CT scanning still has much more ionising radiation than x rays. What is the cumulative radiation risk of seven, or 10, or 20 annual scans?

On the other hand, the efficacy of screening CT for lung cancer may be even greater than the 20% announced last week. The study was stopped early. Longer follow-up would likely have resulted in more deaths in the control group. Also, the study provided only three annual scans. What would have happened if more scans were done? And then there is the matter of all cause mortality, which was reduced by 7% in the CT group.

Many of these questions will be answered soon when the formal analyses of the trial are published. Others will have to await longer follow-up. Still others will remain unanswered. But it is great news indeed to have even a preliminary report of a large, well conducted RCT of a screening test for the leading cause of cancer deaths that led to a significant reduction in mortality.

Douglas Kamerow is chief scientist, RTI International, and associate editor, BMJdkamerow@rti.org

Cite this as: *BMJ* 2010;341:c6544

See also **NEWS**, p 1073

MEDICINE AND THE MEDIA

Private insurers coming to a TV screen near you

What does the current spate of advertising for private medical insurance in the UK say about how the market is changing, and what the future is for the sector? **Margaret McCartney** reports

AXA is advertising for your custom and in so doing has put you on a treadmill. “Do you struggle to get the medical treatment you need? At AXAPPP healthcare, we offer an affordable six week option”—a way off the treadmill and straight to the hospital door. “Private medical insurance that complements the NHS,” AXA says. “One of the many ways we help you get treatment when you need it” (www.axapphealthcare.co.uk/personal/tv-advert).

Many other health insurance companies are out looking for business too. BUPA wants its current customers to feel the “value of having private health insurance and reassurance this can bring to our customers” (www.bupa.com/mediacentre/advertising-promotion). To prove it the company has a series of cartoons consisting of animated blobs with various things wrong with them. For example, Geoff is a blob with a sore elbow, who if suitably insured can find himself in a “clean comfy” hospital for four sessions of physiotherapy before he feels better.

Speed of access to private insurance in current advertising is highlighted: AXA is keen to point out that there is “no medical examination needed, or complex medical questions” before taking up a contract with it. The private healthcare insurance market, though, is exposed. In the context of a credit squeeze, many people—individuals as well as businesses—will be looking to try to reduce non-essential outgoings. But with pressure on National Health Service budgets, others may feel more drawn to taking out health insurance. So what is happening to the health insurance market in the United Kingdom, and are changes in the NHS contributing to this?

The Association of British Insurers reports a fall in uptake of insurance. It gives the most recent figures for personal medical insurance as 970 000 policies in the UK at the end of 2009. This has been a fall of 50 000 from 2008 and is the lowest number since it started collating data in 1985 (www.ifaonline.co.uk/cover/feature/1741558/it-s-not-me-it-s-you). This trend is in agreement with figures produced by the industry analysts Laing and Buisson. Earlier this year they pro-

duced a report that noted that people buying their health insurance had fallen to the lowest since the 1970s, with policies funded by employers falling by 4.7% and individual policies falling by 5.2% (www.guardian.co.uk/society/2010/jul/19/health-insurance-slumps). The author of the report was quoted as saying that he expected the market to be dampened for some time, but if NHS waiting lists were to rise this may represent a growth stimulus. With the government scrapping promises of cancer referral times of one week and one to one nursing in cancer care—no matter if these were not based on evidence to start with—some in the industry are hoping that this will provide enough momentum for some people to respond to current advertising campaigns.

Indeed, the access BUPA provides to a “nurse healthline” 24 hours, seven days a week, is a core feature of its Heartbeat health cover range, as well as “access to breakthrough drugs,” which

the NHS is a popular marketing tool. One survey of 1000 people by healthcare insurance provider www.health365.com found that 80% of adults are worried about the cost of healthcare and that one in three had delayed their treatment because of concern about costs. The market for personal medical insurance exploits this concern; indeed policies that focus on specific health fears and that also cost less than traditional policies are available, although they are restrictive in cover. For example, the Well Woman Plan insures only against female specific cancers: all other illnesses are excluded (www.wellwomanplan.co.uk). Similarly, BUPA has a “health care select heart and cancer” plan, which excludes all other conditions and even then covers “acute” problems only.

Is any of this good news for patients? Behind the scenes there have been multiple acquisitions, sell-offs, and mergers of insurance companies. Recently BUPA sold its life, income, and critical insurance business. The same company, Resolution, bought Friends Provident last year and has also recently acquired AXA's life insurance and savings division. Health insurance companies don't always just sell insurance: mainly they are larger enterprises with interests not just in health insurance but in life insurance, and they may also be health providers. These companies are creating a state of readiness that may prove useful for them should general practitioner commissioning open more routes to other providers. What does this mean for the person wondering if private health insurance may be a better protection in NHS cuts?

Exclusion policies are rife. Investing too much in private insurance, whether money or hope, may not be the most useful way to protect against deficiencies in the UK. And the statements made by some private medical insurance providers about working “with” the NHS are ironic given that private provision uptake is likely to reflect a perceived lack of core NHS services. As in all such matters, attention to the small print, as well as the bigger picture, matters.

Margaret McCartney is a general practitioner, Glasgow
margaret@margaretmccartney.com
 Competing interests: None declared.

Cite this as: *BMJ* 2010;341:c6572



BUPA's adverts display animated blobs with various things wrong with them

a customer may fear may not be covered under the NHS. Dental insurance subscription is now falling, with a drop of 2% in the past year, a marked reversal from annual growth of 31% in the three years before this. Official figures from the NHS Information Centre show a steady growth in the proportion of the population seen in the NHS since mid-2008 (www.ic.nhs.uk/webfiles/publications/Primary%20Care/Dentistry/dentalstats0910/NHS_Dental_Statistics_England_200910.Report.pdf). The explanation may be that perceived need for private dental care has fallen: will this have implications for the NHS?

The current spate of advertising for personal medical insurance is presumably hoping to rectify the dip in uptake, and using potential shortfalls in