Changes in recruitment to public health consultant posts and hospital consultant posts in England: potential impact on the sustainability of the public health system

Ruth Harrell\textsuperscript{1}, Michael Caley\textsuperscript{2}, Dominique Allwood\textsuperscript{3}, Tom Fowler\textsuperscript{4}

\textsuperscript{1}NHS Coventry, Coventry, UK
\textsuperscript{2}NHS Warwickshire, Warwick, UK
\textsuperscript{3}King’s Fund, London, UK
\textsuperscript{4}Unit of Urologic and Genetic Epidemiology, Department of Public Health, Epidemiology, and Biostatistics, School of Medicine, University of Birmingham, Birmingham, UK

Address correspondence to Michael Caley, E-mail: mikecaley@doctors.org.uk

\textbf{ABSTRACT}

\textbf{Background} The UK government has proposed major changes to the Public Health system in England. This study aims to quantify increasing anecdotal concern that the number of Public Health consultant posts advertised has plummeted since the publication of these plans.

\textbf{Methods} The archives of BMJ careers were interrogated for hospital and Public Health consultant posts advertised October 2008 and May 2011. Statistical process control charts were used to compare differences in recruitment over time and the ratio of Public Health:hospital consultant posts.

\textbf{Results} We found a highly significant reduction in the mean number of advertisements for Public Health consultant posts from 27.9 posts per month in the period October 2008–November 2009 to 6.3 posts per month between December 2009 and May 2010 ($P < 0.005$). The ratio of Public Health:hospital consultant posts fell from 3.3 to 0.9 Public Health consultant posts per 100 hospital consultant posts ($P < 0.005$).

\textbf{Conclusions} This study confirms the anecdotal concern that there has been a significant reduction in the advertisement, and by extrapolation, recruitment to Public Health consultants posts in England around the time of the publication of the government’s reform plans. Public Health consultant posts have been disproportionately affected by this reduction compared to hospital consultant posts.

\textbf{Keywords} health services, public health

\textbf{Introduction}

The proposed changes made by the coalition government under the banner of ‘Liberating the NHS’ and ‘Healthy Lives, Healthy People\textsuperscript{1}’ published in June 2010 include radical reorganization of the NHS and the Public Health system in England. The government is creating a Public Health service led by a new organization, Public Health England. It has stated that Public Health should be ‘specialist-led’ and that the Director of Public Health (DPH), based in the local authorities, will be the principal advisor to the emerging Health and Wellbeing Boards.\textsuperscript{2} The government has also committed to the idea that critical to the success of the new Public Health system is ‘maintaining a well-trained, highly motivated Public Health workforce’.\textsuperscript{1}

There are significant challenges to this goal; the 2007 Faculty of Public Health workforce census suggested that 20\% of the Public Health specialist workforce were planning to leave the profession during the 2007–11 period, over half of whom were 55 years of age or over at the time of the survey.\textsuperscript{3} In previous substantial reorganizations of Public Health, around 20\% of the workforce has taken early retirement.\textsuperscript{4} Workforce data suggest that, even with current...
recruitment to specialist training programmes, there is likely to be a shortage of qualified individuals over the next few years.\(^6\) In addition, at present \(\sim 15\%\) of DPH posts are vacant.\(^6\) Over half of Public Health consultant posts are currently employed within non-acute NHS organizations\(^5\) (i.e. Primary Care Trusts and Strategic Health Authorities), which are planned to be abolished or consolidated.\(^7\) Whilst there are plans to move Public Health services to local authorities and the new organization, Public Health England, the final configuration and staffing requirements of the new public health system are far from clear.

Despite the current financial constraints, it would be reasonable to expect, given the government’s commitments, a concerted effort to fill vacant DPH posts and, at least, replace those posts becoming vacant due to retirement of Public Health consultants. However, we have noted increasing anecdotal concern that the number of Public Health consultant posts advertised has plummeted since the publication of the government’s plans in June 2010. Given these concerns, this study aims to assess whether there has been a reduction in overall number of advertised Public Health consultant posts in England and whether Public Health has been particularly affected by transition arrangements compared with other medical specialities.

Methods

BMJ careers is a central portal for advertising medical and Public Health jobs in the England. The BMJ Careers archive was interrogated to find the total number of advertised consultant posts in England available over the timescale from 12 October 2008 (the earliest date for which data was available) to 12 May 2011. Time periods used were monthly, from the 12th of 1 month to the 11th of the next.

The number of hospital consultant posts advertised in each month was collected using the filters ‘Hospital Jobs’ and ‘Consultant’. Due to the large numbers of posts found using this search strategy (around 800 per month) it was assumed that in any given month one advert was submitted per advertised post (a small sample of 50 adverts suggested that this may underestimate posts by up to 10%). For Public Health consultant posts, the filters for category ‘General Medical Jobs’ and for specialty ‘Public and Community Health’ and ‘Consultant’ were used. Adverts were then checked to confirm consultant grade and Public Health specialty, and the number of available posts in each advert. No differentiation was made between medical or non-medical consultant posts. We included academic posts at English universities at senior lecturer grade and above in all specialities.

Analysis was undertaken using run charts, a specific subtype of statistical process control charts that can be used to examine changes over time. Run charts can be used to analyse count data and ratios. The process average is displayed on the graph, along with upper and lower control limits, at three standard deviations above and below the process average. When interpreting run charts, there are a number of criteria that are used to identify where a change in the process are significantly more likely to be attributable to special cause rather than random variation.\(^9\) In our analysis the two commonly used rules that informed the interpretation of the results were:

- Where one or more points occur outside the control limits, this suggests that the difference seen in these points from the average is due to special cause variation (with a probability of \(\sim 0.3\%\) that this is due to chance). The control limits are set at 3 standard deviations above and below the process average.
- Where seven consecutive points lying on one side of the process average, this suggests there has been a significant shift in the process (with a probability of 0.8% that this is due to chance). The greater the number of consecutive points, the smaller the probability that this shift is due to chance/random variation.

The difference in the mean number of posts advertised per month in two different time periods were also analysed. A \(t\)-test was used to analyse whether these differences were significant.

In order to explore whether Public Health consultant posts had been disproportionately affected compared with other consultant posts, the ratio of these posts to one another was also analysed using run charts.

Results

The number of hospital consultant level posts (Fig. 1) has shown a decline over the study period; the control chart shows a run of 10 points below the mean, from approximately July 2010 to present. There is also one point below the lower control limit (more than three standard deviations away from the mean). This implies a significant shift \((P < 0.008)\) downwards in the average number of hospital consultant post advertised over the last 10 months, which is unlikely to be due to random variation.

Advertisements for Public Health consultant posts have also shown a marked reduction (Fig. 2), with a significant step change from December 2009. Before December 2009, all 14 points were above the process average, with 10 of those points more than three standard deviations above the process average showing a significant change has occurred.
From December 2009 onwards, all 17 points for which we have data are below the process average, with seven below the lower control limit. The control chart provides evidence that this significant shift downwards of the process is unlikely to be due to random variation.

Before December 2009, the average number of Public Health consultant posts advertised in a 1-month period was 27.9 [95% confidence interval (CI) 25.8–30.0]. The average number of posts advertised after December 2009 was 6.3 (95% CI 4.4–8.2). By comparing the average number of jobs advertised before and after the start of this downward trend (occurring from December 2009 onwards), we can demonstrate that there has been a significant ($t$-test $P < 0.005$) reduction in the number of posts advertised for Public Health consultants.

To compare how advertisement of Public Health consultant posts in comparison with hospital consultant posts have changed, the ratio of Public Health to hospital specialty posts was calculated (Fig. 3). Again, the control chart demonstrates a clear change in this ratio pre- and post-December 2009; all 14 points pre-December 2009 are above the process average, with 4 points being more than three standard deviations above, and all of the points from December onwards below the process average.

From October 2008 to November 2009 inclusive, there were 3.3 PH posts advertised for every 100 hospital posts (95% CI 2.9–3.6), and from December 2009 to April 2011 there were 0.9 PH posts for every 100 hospital posts (95% CI 0.6–1.2). The difference in this ratio was a reduction of 2.4 advertised Public Health posts per 100 hospital
consultant posts (with 95% CI 2.0–2.8) and is significant at $P < 0.005$ ($t$-test).

**Discussion**

This study confirms the anecdotal concern that there has been a significant reduction in advertisement of Public Health consultant posts in the England around the time of the publication of the government’s reform plans and that this reduction continues into 2011. A step change, which happened in December 2009, coincided with a number of documents describing the size of the financial challenge and the need to drive down NHS management costs, despite Public Health being a medical speciality and not usually considered as a management cost within PCT/SHA budgets. More significantly, it demonstrates that advertisement, and by extrapolation, recruitment of Public Health consultant posts have been disproportionately affected by this reduction in recruitment compared with hospital consultant posts.

The study also demonstrates a significant reduction in advertised hospital consultant posts in England since approximately July 2010. With the number of jobs advertised reducing by around 30% compared with the previous period (October 2008 to June 2010). This has clear implications in the medium term for frontline service provision and is also an area of concern. The health service is currently facing unprecedented economic pressures with the 'Nicholson Challenge', finding £20 billion in savings for reinvestment in frontline services. It seems likely that this reduction is in part a response to the current economic pressures. However, as it is intended that efficiency savings are re-invested in frontline services, local planning for these savings should perhaps more explicitly consider their potential impact on the sustainability of the consultant and other workforces.

We did attempt to perform a similar analysis for the devolved administrations of the UK (Wales, Scotland, Northern Ireland), but due to the small numbers of Public Health consultant posts compared with England, it has been difficult to achieve robust results for these areas. However, preliminary results suggest a similar reduction in hospital consultant posts advertised, but without the step change in the ratio of Public Health to hospital consultant advertised posts observed in England.

While it must be recognized that there are a number of potential reasons for the reduction in adverts, including cost saving through greater reliance on the NHS jobs website, these results do suggest that there has been a reduction in Public Health consultant opportunities which appears to contradict the White Paper ‘Liberating the NHS’ which was published at around the same time. In addition, there is no convincing evidence that organizations that employ Public Health consultants use BMJ careers any less than organizations that employ other consultants, and we therefore do not consider this to be a factor on any great significance especially when considering the changes in the ratio of Public Health to hospital consultant advertised posts observed in England.

We used the number of advertised posts over a one month period as the main study metric since the actual
number of recruited posts was too cumbersome to estimate, given such a large number of posts find over such a large time period. Since posts are generally advertised over several weeks, this method does mean that some posts will be counted twice in consecutive months. However, our sample of 50 posts did not show a change in the length of time that posts are advertised for pre- and post-November 2009 and did not show a difference in the length of time Public Health and hospital consultant posts were advertised for. Therefore the metric used should strongly correlate with the actual number of posts available.

The causes of the reduction in the ratio of the advertised Public Health to hospital consultant posts are likely to be a mixture of the uncertainty caused by the announcement of the reforms in England including how Public Health England might operate in the future and the constraints on NHS budgets, especially in PCTs and SHAs that are undergoing the most drastic reorganizations, leading to recruitment freezes.

It seems unlikely that the drop in numbers of jobs advertised is due to the absence of Public Health specialist posts becoming vacant based on the previous consistent number of posts becoming available each month between October 2008 and December 2009. Therefore, in effect, our results point towards a potential reduction in size of the specialist Public Health workforce in England over the last 18 months.

Public Health, and the specialist leadership within it, has been a central tenant of the coalition governments reform plans. The importance of this workforce was underlined recently by Sir David Nicholson, the NHS chief executive, in his letter of the 17th February 2011, which stated that ‘during the transition year 2011–12 the NHS must continue to lead on improvements to Public Health, ensuring that Public Health services are in the strongest possible position when responsibilities are devolved to local authorities. As we deliver the very significant cost savings required of us, it is important that our plans reflect the need to retain staff with scarce specialist Public Health skills. This will ensure that sufficient resources are retained within the system to deliver critical Public Health functions during transition to the new arrangements and in the future’.10

This drop in advertisement, and by inference recruitment, potentially poses a considerable threat to the integrity of local Public Health departments and the ability of PCTs, local authorities and emerging clinical commissioning groups to tackle the needs of health improvement, reduce health inequalities and successfully manage the transition of Public Health over the next 2 years.

Whilst workforce planning is notoriously difficult, it is unlikely that in the medium term the need for consultants required in Public Health will decrease especially, given the prominence that the government has given to the importance of Public Health in its plans. The recent NHS Future Forum concluded that ‘the need for a strengthened Public health system at local and national level is clear’. The forum recommended that this should be supported by ‘an independent, expert Public Health advice at every level of the system’.

The pressing concern for the NHS and Department of Health in England is the impact on the ability to sustain a high-quality Public Health service during a period of restructuring with a workforce that is being reduced in size. This has obvious consequences for the ability of the system to deliver the ambitious Public Health plans that the government is setting out, and poses one of the greatest risks to achieving these goals.

References


