Hospital pharmacy staffing levels in England: has anything changed in the last 5 years?

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ABSTRACT

Objective To undertake an analysis of hospital pharmacy staffing levels in England comparing national and regional averages for 2007/2008 and 2012/2013.

Methods Individual hospital pharmacy staffing establishment data were extracted from the National Health Service (NHS) Pharmacy Education and Development Committee's National NHS Pharmacy Staffing Establishment and Vacancy Survey for 2007/2008 and 2012/2013. Hospital activity data for the 2 years were extracted from the NHS Health and Social Care Information Centre website. For each hospital, the number of whole time equivalent (WTE) pharmacy staff was divided by the number of admissions and a percentage WTE/admission calculated. Acute hospitals were analysed separately from mental health hospitals.

Results The mean % WTE pharmacy staff/admission in acute hospitals in England 2012/2013 was 0.114 compared with 0.112 in 2007/2008 ($p>0.05$). The means for individual staff groups have either remained unchanged or have reduced slightly. There were also changes by region with some increasing and others decreasing. The changes in mental health and social care trusts were more marked with the median % WTE pharmacy staff/admission almost doubling in 2012/2013 compared with 2007/2008. This increase in establishment was seen in all pharmacy staff groups.

Conclusions The number of pharmacy staff per admission in acute hospitals in England between 2007/2008 and 2012/2013 has not changed significantly. This indicates that pharmacy services have kept pace with increasing activity. In contrast, pharmacy staffing levels in mental health trusts have almost doubled in the intervening 5 years as a result of a national initiative to develop the workforce in mental health services.

INTRODUCTION

In 2010, we published the first paper comparing Hospital Pharmacy Staffing levels in England based on data collected as part of the annual National Health Service (NHS) Pharmacy Staffing Establishment and Vacancy Survey in 2007/2008.¹ The paper produced a national benchmark of hospital pharmacy staff per admission as well as regional averages across the then 10 English NHS regions. The paper also showed that mental health trusts had a higher number of pharmacy staff per admission with a very different skill mix, which comprised predominantly pharmacists.

In the intervening years, the NHS in England has faced a period of fiscal austerity in response to the global economic downturn. In 2010, the NHS was challenged with saving £20 billion over 3 years.² This was achieved through a variety of initiatives including reorganisation of the NHS to improve

efficiency, as well as a net reduction in funding. NHS hospitals are funded through a system termed Payment by Results (PbR). Under PbR, hospitals are paid a fee for each episode of patient care termed a 'tariff'.³ In 2010/2011, the net tariff uplift was 0%; 2011/2012 saw a net tariff reduction of 1.5% with a further reduction of 1.8% in 2012/2013.⁴ As hospitals have to fund all services used to deliver patient care, including pharmacy, through income from tariff, this net reduction in income puts pressure on them to reduce costs. Against this backdrop, the NHS expenditure on hospital medicines has risen from £2.886 billion in 2007 to £4.852 billion in 2012, a rise of 68%, whereas in primary care there was only a 1.4% rise over the same period (£8.169 billion to £8.282 billion).^{5, 6} Clearly this increase in hospital medicines use has put the spotlight on hospital pharmacy services. Therefore, it was decided to repeat the work undertaken in 2007/2008 on hospital pharmacy staffing levels to understand what, if any, changes there had been both in acute and mental health trusts in the intervening 5 years.

METHODOLOGY

Individual hospital pharmacy staffing establishment data were extracted from the 2012/2013 NHS Pharmacy Education and Development Committee's National NHS Pharmacy Staffing Establishment and Vacancy Survey, May 2013.⁷ Hospital activity data for 2012/2013 were extracted from the NHS Health and Social Care Information Centre website <http://www.hscic.co.uk>.

For each hospital pharmacy in England, the number of whole time equivalent (WTE) pharmacy staff was divided by the number of admissions for that hospital for that year. As the ratio was very small, it was then multiplied by 100 to create a percentage WTE/admission. Using the workforce data from the staffing establishment and vacancy survey, it was possible to calculate the percentage WTE/admission for pharmacists, pharmacy technicians and support staff separately. The latter group of staff included pharmacy assistants, administrative and clerical staff, and delivery staff.

Acute hospitals were analysed separately from mental health and social care hospitals since the latter had longer lengths of stay, which would have skewed the data if combined with acute hospital data.

Major national and regional cancer hospitals were excluded from the initial analysis in 2007/2008 since it was felt that they would have unusual staffing profiles due to the high level of labour-intensive aseptic dispensing being undertaken. For this latest research, the data were further refined

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with the exclusion of specialist hospitals such as children's, neurology, orthopaedic and eye hospitals since on examination of the raw data, they too had higher staffing levels. In order to ensure consistency, the 2007/2008 data were revisited and the same exclusions applied. Teaching hospitals and general acute hospitals were not segregated in the analysis since it was not always possible to differentiate these from the hospital name, although it is recognised that staffing profiles may be different.

Data analysis was undertaken on 138 acute hospital NHS trusts (150 in 2007/2008), and 42 mental health and social care trusts (50 in 2007/2008) in England. Although workforce data were available for Wales and Northern Ireland, there was no easily accessible corresponding hospital activity data so these were not included in the analysis.

Statistical analysis was undertaken comparing both years in both hospital settings. In the acute hospitals, the mean data were subject to t test since the data followed a normal distribution. The Mann-Whitney test was applied to the mental health and social care trust data since this did not follow normal distribution. Subgroup analysis down to regional level was undertaken for the acute hospital data for both years, but this was not possible for the mental health and social care trusts as the numbers of trusts in each region were too small.

RESULTS

The mean % WTE all pharmacy staff/admission in acute hospitals in England 2012/2013 was 0.114 (n=138) compared with 0.112 in 2007/2008 (n=150). This difference was not statistically significant ($p>0.05$). Although the overall mean total pharmacy staffing has increased slightly, the means for individual staff groups have either remained unchanged (pharmacists 0.038% WTE/admission 2012/2013 and 2007/2008) or reduced slightly (pharmacy technicians 0.037% WTE/admission in 2012/2013 compared with 0.043% WTE/admission in 2007/2008) (support staff 0.028% WTE/admission in 2012/2013 compared with 0.031% WTE/admission in 2007/2008). Table 1 shows the mean %WTE/admission for all pharmacy staff for each region. As can be seen from table 1, there are regional variations compared with the all England average. None of these regional variations were statistically significant apart from London, which was statistically higher than the all England average in 2012/2013 ($p<0.05$), and the South West, which was statistically lower in both years ($p<0.05$).

Figures 1–3 compare the mean %WTE/admission for the three pharmacy staff groups by region for 2007/2008 and 2012/2013.

Table 1 Mean % whole time equivalent/admission for all pharmacy staff in acute trusts by region

Region	2007/2008	2012/2013	p Value
North East	0.110% (n=9)	0.101% (n=8)	0.44
North West	0.114% (n=24)	0.118% (n=22)	0.59
Yorkshire and Humber	0.115% (n=15)	0.117% (n=13)	0.89
East Midlands	0.112% (n=8)	0.115% (n=9)	0.80
West Midlands	0.119% (n=15)	0.113% (n=15)	0.44
East of England	0.108% (n=17)	0.111% (n=17)	0.79
London	0.128% (n=26)	0.135% (n=21)	0.55
South East	0.108% (n=10)	0.109% (n=12)	0.93
South Central	0.103% (n=9)	0.104% (n=11)	0.84
South West	0.088% (n=17)	0.095% (n=10)	0.49
All England	0.112% (n=150)	0.114% (n=138)	0.52

The changes in mental health and social care trusts were more marked with the median % WTE pharmacy staff/admission in 2012/2013 being 0.891 compared with 0.467 in 2007/2008. This increase in establishment was seen in all pharmacy staff groups (table 2).

DISCUSSION

The paper published in 2010 was the first national benchmarking of hospital pharmacy staffing establishment levels in England and provided national and regional profiles based on 2007/2008 workforce data.¹ This latest analysis based on the National NHS Pharmacy Staffing Establishment and Vacancy Survey 2012/2013 shows that in the intervening 5 years the overall acute hospital pharmacy workforce, normalised for activity, has not changed significantly (table 1). The raw data from the two surveys show that the hospital pharmacy workforce in England, excluding those in training, has increased from 16 017 to 18 094.⁸ However, when specialist hospitals are removed and the data normalised for hospital activity, which has also increased from 12 709 798 admissions in 2007/2008 to 13 974 544 in 2012/2013, the results are very similar with a very small but not statistically significant increase (table 1).

This would suggest that hospital pharmacy departments have been successful in increasing their establishments as the activity of their hospitals changes. This result is somewhat surprising given the pressure on the NHS to save money over the last few years.² However, the way hospitals are funded through PbR does allow hospitals to earn more income for doing more work.⁴ The results of this analysis would indicate that this additional income is filtering through into support services such as pharmacy. The argument for having an adequate pharmacy workforce is strengthened by the fact that UK hospital pharmacists undertake a largely clinical role ensuring safe, rational and cost-effective use of medicines.^{9–10} Furthermore, it is recognised that this role is valuable in preventing prescribing errors made by junior hospital medical staff reaching the patient.¹¹ Indeed, there have been calls recently for clinical pharmacists to work in general practice surgeries where doctors practice in the community.^{12–13} Furthermore, hospital pharmacies also play an essential role in facilitating timely discharge of patients from hospital to free up beds to cope with the rising number of emergency admissions.

The initial paper demonstrated that there was wide variation between regions with London having the highest levels of staffing and the South West the lowest.¹ This regional variation has

Figure 1 Changes in pharmacist establishment by region.

Figure 2 Changes in pharmacy technician establishment by region.

remained the same (table 1) with London being statistically higher than the all England average in 2012/2013 ($p < 0.05$) and the South West statistically lower in both years ($p < 0.05$). However, in the 5 years since the last benchmarking analysis, some regions have seen an increase in their overall pharmacy staffing establishments and some have seen a decrease, although none of these changes were of statistical significance (table 1).

Comparisons of the staffing profiles across the regions (figure 1) also reveal some interesting differences. London still has the highest number of pharmacists per admission, which is not surprising given the number of schools of pharmacy and the fact that London has a high concentration of teaching and specialist hospitals. The higher cost of living in London may also be an influencing factor on staffing skill mix. Although the number of pharmacists/admissions in London, the West Midlands and the South West has reduced slightly from 2007/2008, most regions have either remained the same or increased (figure 1). This contrasts with the general reduction in pharmacy technicians per admission in 2012/2013 compared with 2007/2008 (figure 2). A recent publication using the same raw data set, but without hospital activity factored in, showing trends from 2008 to 2014, showed pharmacist posts had risen at a greater rate than pharmacy technicians.¹⁴ This would support the findings in this paper, which factored in hospital activity data that has also risen. This differential change in hospital pharmacist and pharmacy technicians could be related to the widening use of the pharmacist's clinical skills (eg, as non-medical prescribers, work in admissions units and

Table 2 Median % whole time equivalent (WTE)/admission for all pharmacy staff in mental health and social care trusts in England

Staff group	%WTE/admission 2007/2008 (n=50)	%WTE/admission 2012/2013 (n=42)	p Value
Pharmacists	0.243	0.417	0.00064
Pharmacy technicians	0.156	0.325	0.00164
Support staff	0.055	0.138	0.00452
All	0.467	0.891	0.00164

emergency departments) and the rise in number of practising pharmacists in Great Britain, which rose from 39 378 in 2008 to 45 391 in 2013, of which 21% work in hospital.¹⁵ The proportion of pharmacists working in hospital in England is about three times greater than the European average, perhaps reflecting the more clinical nature of their role in the UK.¹⁶

Although the number of pharmacy technician WTE/admission has changed, the West Midlands still has the highest number compared with other regions. Yorkshire and Humber has the lowest number of pharmacy technicians per admission, which is a change from 2007/2008 (figure 2), but still has the highest number of support staff per admission (figure 3). The regional variation in pharmacy workforce skill mix is likely to be related to the local recruitment environment.

In contrast to the relatively static picture in acute hospitals, there has been an almost doubling of pharmacy staff working in mental health and social care trusts (table 2), which is statistically significant ($p < 0.05$). Unlike the acute hospitals, this pattern is seen across all pharmacy staff groups (table 2). This increase is likely to be due to the increased investment in pharmacy services to mental health and social care trusts following the publication of a Department of Health report on developing a mental health workforce.^{17 18}

As stated in our previous paper, the larger number of pharmacy staff per admission in mental health and social care trusts compared with acute trusts is probably due to the lower number of admissions in mental health trusts, which averaged 2770/hospital compared with 101 264/hospital for acute trusts. This lower admission rate is probably due to the longer length of stay, which is 52 days for adult mental health compared with a mean of 5.2 days across all hospital specialties.¹⁹

STUDY LIMITATIONS

The pharmacy workforce in some hospitals may be larger than others due to the hospital providing services to other trusts (eg, medicines supply to mental health and social care trusts) or operating manufacturing units that sell products to other organisations. It was not possible from the raw data to differentiate these hospitals from the rest. The difference in number of trusts in the regional cohorts is indicative of mergers that have taken place in the intervening years as part of the NHS efficiency programme.

CONCLUSION

This paper has demonstrated that although there has been an increase in numbers of pharmacy staff in acute hospitals in England between 2007/2008 and 2012/2013, when activity is taken into account, the number per admission has not changed significantly. This is despite the financial pressures on the NHS in England and indicates that pharmacy services have kept pace with increasing activity. In contrast, pharmacy staffing levels in

Figure 3 Changes in pharmacy support staff establishment by region.

mental health and social care trusts have almost doubled in the intervening 5 years as a result of a national initiative to develop the workforce in mental health services.

These latest results from both healthcare sectors provide valuable benchmarking data for pharmacy managers in the acute and mental health sectors to use locally.

Key messages

What is already known on this subject

- What little is known about hospital pharmacy staffing levels is very high-level national data.
- The authors published the only detailed analysis on hospital pharmacy staffing levels in England 5 years ago.

What this study adds

- Shows changes in hospital pharmacy staffing levels in England over the last 5 years by sector.
- Shows different trends in acute hospitals and mental health hospitals.
- Shows changes in acute hospitals by region and by staff group.
- Provides up-to-date hospital pharmacy workforce benchmarking data that will be of interest to pharmacy managers nationally and across Europe.

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Contributors Both authors contributed to the planning, conduct and reporting of the work described in this paper.

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