



Workforce Survey of Histopathology/Cellular Pathology Departments 2017

Summary of findings related to post-mortems for HM Coroner in England and Wales

The College conducted a survey of Histopathology/Cellular Pathology Departments in organisations between January–March 2017. It achieved a response rate of 73% of departments/organisations. The high response rate provides good confidence that the results are likely to be representative.

FINDINGS

Staffing Numbers

81 of the respondents in England and Wales specifically stated that autopsy work on behalf of Her Majesty's (HM) Coroner was carried out in their departments, representing **86% of responding departments**. Extrapolating the number of respondents could indicate around 111 departments currently performing Coronial autopsies in England and Wales.

When broken down by English region and Wales, the proportion of responding departments performing Coronial work is as follows:

East Midlands	100%
East of England	100%
London	55%
North East	100%
North West	94%
South East	87%
South West	80%
West Midlands	87%
Yorkshire & Humber	80%
Wales	100%

The number of pathologists performing post mortems (PMs) in England and Wales were totalled at 334 pathologists, which would indicate around **458 pathologists**, if extrapolated to include non-respondents.

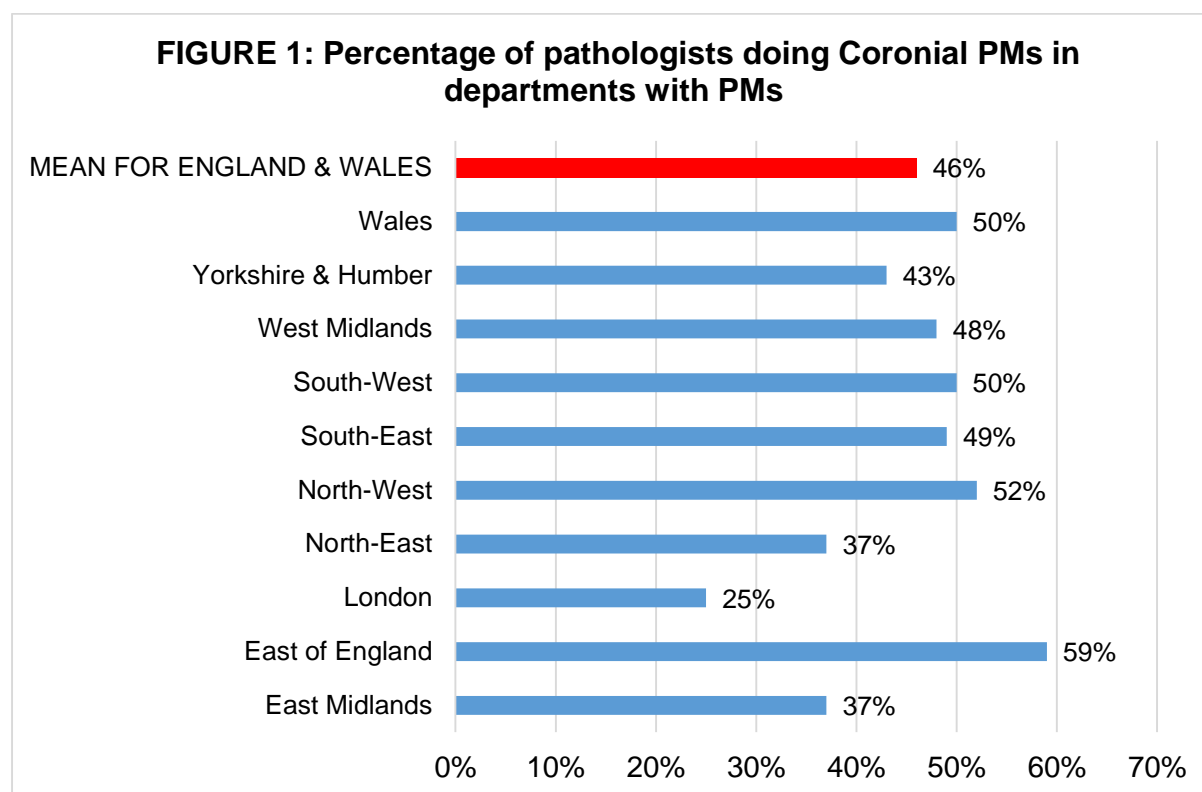
This would indicate around **36% of all pathologists who are currently in post**, in England and Wales, perform autopsies for HM Coroner, or **46% of pathologists in departments who actually undertake Coronial autopsy work**.

Figure 1 indicates the proportion of pathologists in departments who undertake Coronial autopsy work, broken down by region/country.

The majority of regions appear to have **just under 50% of their current staffing levels still undertaking autopsies**, although London may be significantly lower due to the use of public mortuaries.



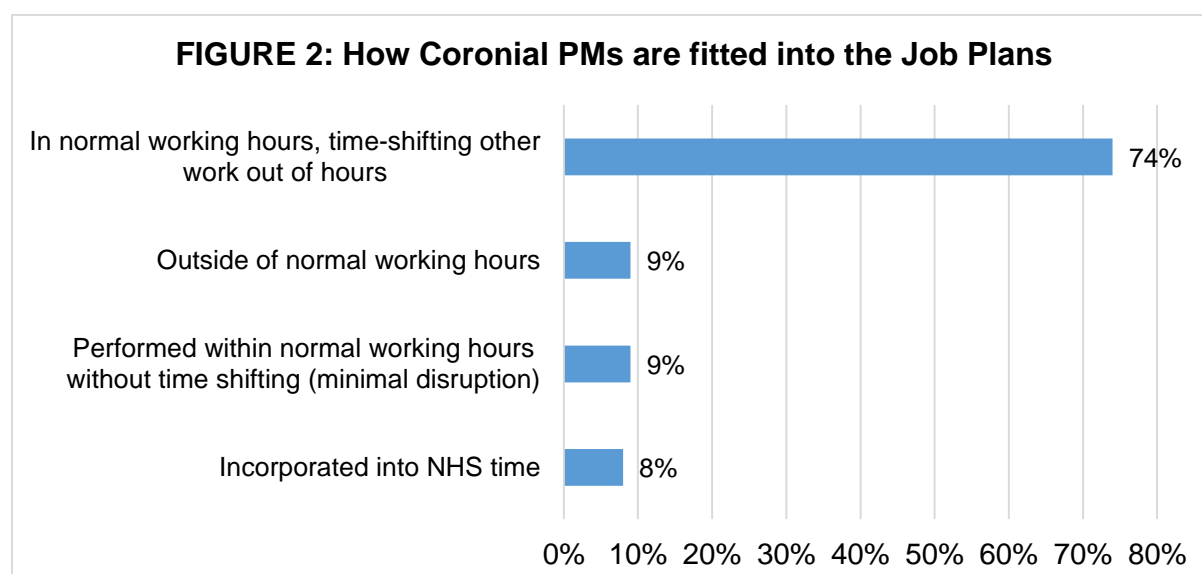
The East of England has a higher proportion of pathologists still undertaking autopsies, compared to all other regions, whilst the North East and East Midlands seem to have a lower proportion of their pathologists still undertaking autopsies, compared to the rest of the country (<40%).



Accommodating Coronial autopsies in job plans

Respondents were asked how post mortems for HM Coroner were accommodated in Job Plans. Four departments (5% of respondents) stated they used external pathologists/agencies to undertake the autopsy work.

Figure 2 details how coronial post mortems fitted into job plans in the remaining departments.



The vast majority of coronial autopsies (>70%) are done within normal working hours, using the time-shifting of other work model.

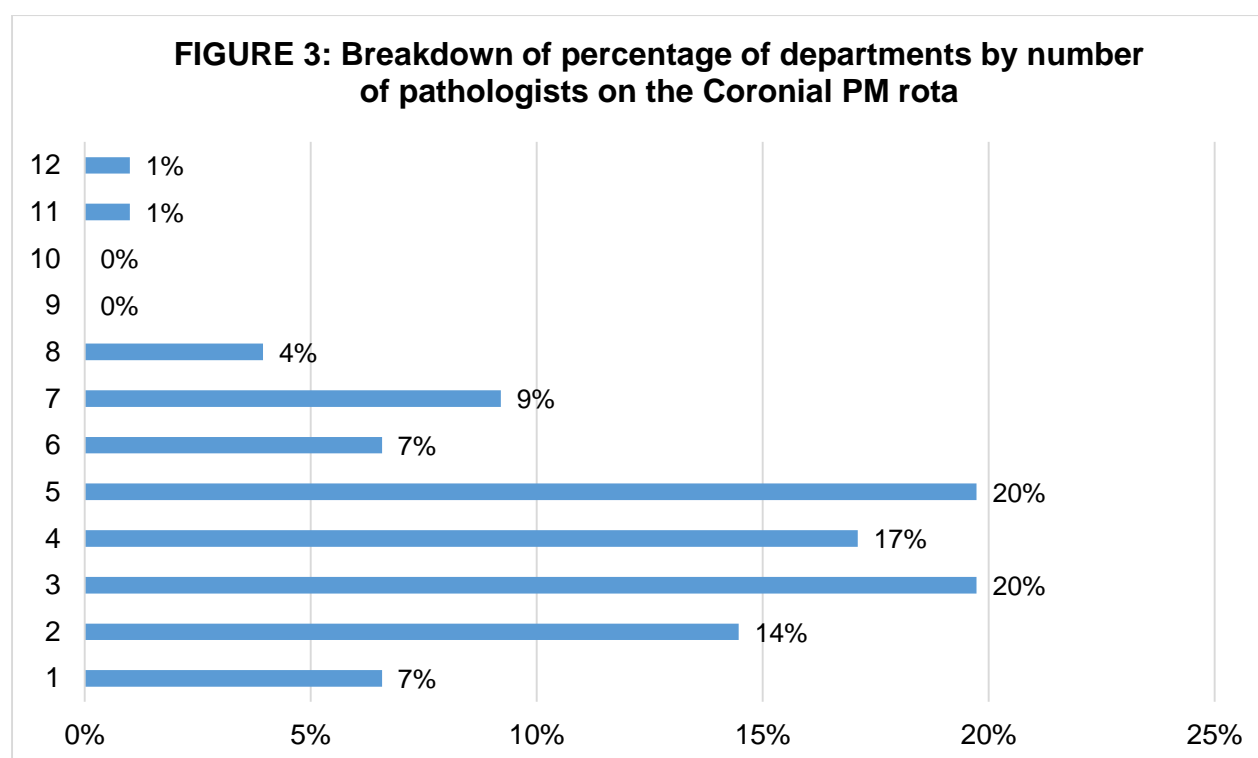
Whilst this model of working has been used for many years, the increasing pressures of non-autopsy related work (such as diagnostic reporting, MDT meetings and administration), with a 'squeeze' on SPA sessions, increasing vacancies and more complex autopsy cases, on flat Coronal fees, may result in this system becoming increasingly less manageable in the future.

Autopsy Rotas

Excluding departments who employ external services to undertake autopsies, there is an average of 4.2 pathologists on the 'typical' autopsy rotas, with a median of 3.5 and modes of 3 and 5 pathologists on rotas.

Figure 3 indicates that 41% of departments operate with only 1-3 pathologists on the rota, whilst 37% of departments operate with 4 to 5 pathologists and 22% have 6 or more pathologists.

The commonest scenario is to expect 2 to 5 pathologists on the autopsy rota (70%).



Broken down by region/country, the average number of pathologists on the roster is:

East Midlands	4.8 pathologists	(43% departments have 1-3 pathologists)
East of England	4.7 pathologists	(50% departments have 1-3 pathologists)
London	3.0 pathologists	(67% departments have 1-3 pathologists)
North East	3.8 pathologists	(33% departments have 1-3 pathologists)
North West	4.6 pathologists	(40% departments have 1-3 pathologists)
South East	5.7 pathologists	(14% departments have 1-3 pathologists)
South West	3.6 pathologists	(50% departments have 1-3 pathologists)
West Midlands	3.7 pathologists	(57% departments have 1-3 pathologists)

Yorkshire & Humber	4.3 pathologists	(43% departments have 1-3 pathologists)
Wales	4.0 pathologists	(20% departments have 1-3 pathologists)

Average rostering numbers has a range of 3.0 to 5.7 pathologists in a region, with a 14-67% range for departments running on 1-3 pathologists in a region.

Highest rostering numbers appear to be in the South East (with very few rosters having less than 4 pathologists), with London, South West and West Midlands having lowest numbers (<4 pathologists on average); most of these departments have no more than 3 pathologists on each of their rotas.

Implications of rostering numbers

There were 58% of departments with no more than 4 pathologists on the roster. Whatever the specific autopsy workload, rosters with 1-4 pathologists must always have challenging times in trying to maintain service cover, especially if there is heavy annual or study leave requirements within the department and *ad hoc* sickness cover to find. Having this small a number of rostered pathologists would indicate the need often to spend 2-3 days of most weeks in the mortuary.

There is an additional “triple-whammy” of effects expected to occur in many departments over the next few years, which will affect staffing numbers:

- (i) Current autopsy pathologists giving up their practice due to other workloads
- (ii) Current autopsy pathologists reaching retirement
- (iii) Proportion of new CCT-holders not holding the C.H.A.T. qualification.

Previous RCPATH publications have suggested around 25% of current autopsy pathologists wish to give up autopsy practice in the near future, coupled with around a third of new CCT-holders not qualified to practice autopsies.

If 25% of current autopsy pathologists were to give up practice over the next 2 years, then the proportion of all pathologists in England and Wales performing autopsies would drop from around 36% to 25% of all pathologists, **a fall from 46% to 35% of staff within departments who undertake autopsies, a fall of potentially 115 pathologists, from 458 to 343 pathologists.** Retirements may add further to this number.

Although the number of trainees gaining C.H.A.T. qualifications every year might add to this total number of pathologists, in the last twelve months a maximum of 30 trainees gained this qualification, and even if all of these practiced autopsy pathology, it would be insufficient to plug the gap unless autopsy numbers fell significantly.

A previous RCPATH survey indicated that incorporating autopsies into NHS time was not a sufficient incentive for current autopsy pathologists to continue doing them for HM Coroner.

The rota staffing (and average of staffed pathologists contributing to autopsies) compared with how autopsies are incorporated in the Job Plans shows:

Done in normal hours, time shifting work:	4.4 pathologists on the rota (average 46%)
Outside of normal working hours:	3.7 pathologists on the rota (average 51%)
Done in normal hours, minimal disruption:	4.6 pathologists on the rota (average 54%)

Incorporated in NHS time:

3.3 pathologists on the rota
(average 51%)

Although the absolute numbers of departments are small, making it difficult to draw robust conclusions, those undertaking autopsies in NHS time have smaller numbers on the rosters, compared to those performing autopsies in addition to their normal work; this would make sense, as these pathologists would be undertaking autopsy practice as a sub-specialty in its own right, similar to surgical pathology, and more than likely spending several sessions per week undertaking autopsies, rather than squeezing them in at the start of the day.

Average sizes of departments and how autopsies are incorporated into job plans:

Done in normal hours, time shifting work:	average 11.6 staff in the departments
Outside of normal working hours:	average 7.0 staff in departments
Done in normal hours, minimal disruption:	average 9.7 staff in departments
Incorporated in NHS time:	average 7.7 staff in departments

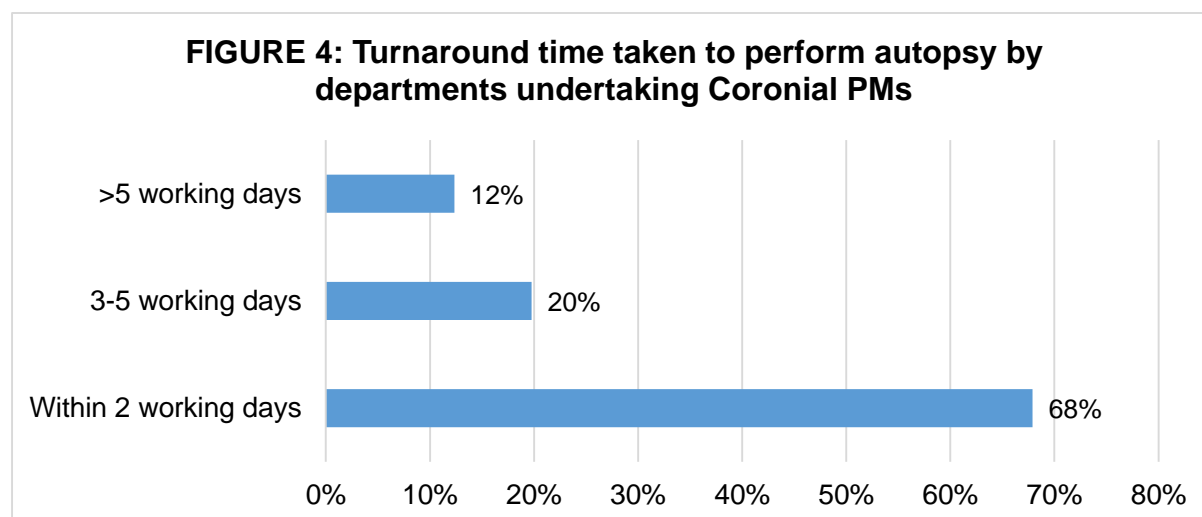
Again, whilst difficult to draw definitive conclusions, it would appear that those where the autopsies are done outside of normal working hours or incorporated into NHS time have smaller-sized departments than those using the time shifting and minimal disruption models.

Turnaround time taken to perform PMs following request

Measuring whether departments performing autopsies are under-staffed or not for performing autopsies is a subjective and multi-factorial matter, based on issues including the number of staff on the roster (for leave cover), number of autopsies expected per pathologist, how the time to perform them is negotiated, amount of NHS PAs performed, departmental vacancy rate (and how the work is covered), etc.

One objective standard is the recognised target of 90%+ of autopsies being completed within 2 working days from the original request. This standard could be used as a useful surrogate marker of examining staffing shortages in departments across England and Wales, with the standard expected to be met when there is adequate staffing levels.

Figure 4 shows that 68% of departments met the standard for performing the autopsy within 2 working days, thus 32% did not, and 12% of departments responded that they took more than 1 working week (>5 working days).



Relationship between meeting target and actual numbers on staffing rotas:

PMs done within 2 working days: Average 4.4 on roster, Mode of 5, Median 4.0
PMs done between 3-5 working days: Average 3.7 on roster, Mode of 2, Median 3.0
PMs done >5 working days: Average 2.1 on roster, Mode of 1, Median 2.5

These data in **Table 1** suggest that the departments meeting the 2 day target have higher absolute numbers of staff on the autopsy roster, which would give a better provision for leave cover.

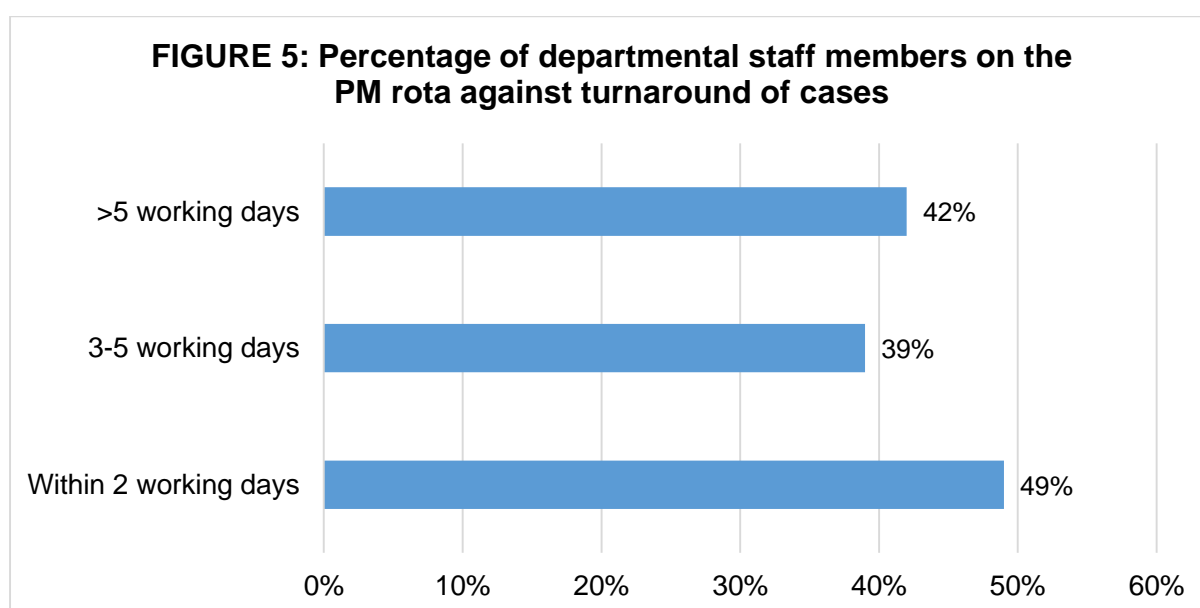
ROTA	Done within 2 days	Done within 3-5 days	Done in more than 5 days
1-2 pathologists	56%	22%	22%
3 pathologists	73%	20%	7%
4 pathologists	64%	29%	7%
5 pathologists	73%	27%	0%
6 pathologists	100%	0%	0%
7+ pathologists	82%	18%	0%
1-4 pathologists	66%	21%	13%
5 + pathologists	80%	20%	0%

Care needs to be taken when interpreting percentages on relatively small numbers, however it appears that a minimum of 5 or more pathologists are required to ensure that cases do not exceed 1 week, with the vast majority (80%) being able to be done within the required 2 working days.

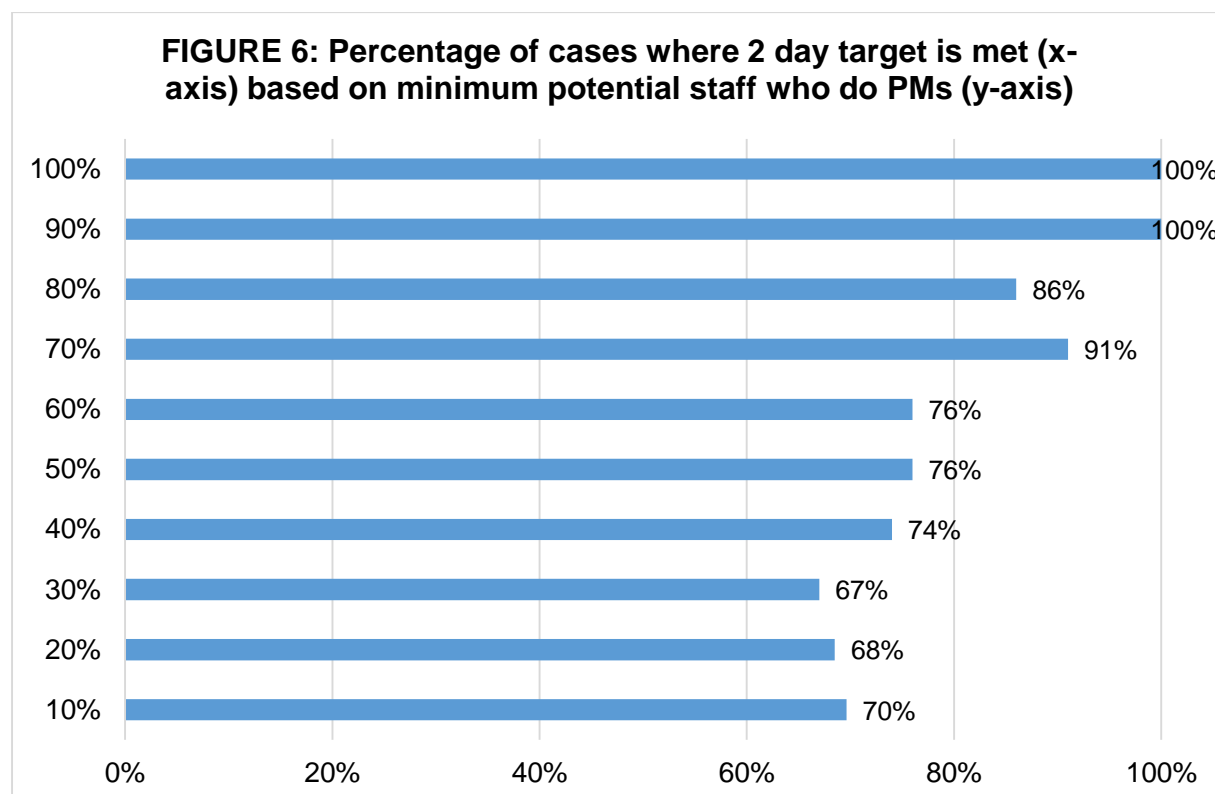
What is not covered here is the workload per pathologist, on average, in terms of numbers of autopsies per year, which may be an underlying issue as to the variation seen in the ability to meet the target.

Departmental staff numbers undertaking autopsies compared with turnaround

Figure 5 shows that the average percentage of staff members in the department is around 50% when the 2 day target is met, but more typically an average of 40% when the time taken is >2 working days.



If the 2 day target compliance is assessed against specific minimum percentage of staff members who do autopsies, then the data in **Figure 6** is produced:



The above graph suggests that the 2 working day standard is much more likely to be met when at least 70% or more of the departmental staff members also participates in the Coronial autopsy roster.

This might indicate that the proportion of pathologists doing autopsies in a department is just as important as the actual number, in order to reach the turnaround standard, as it probably reflects the general workload of the department.

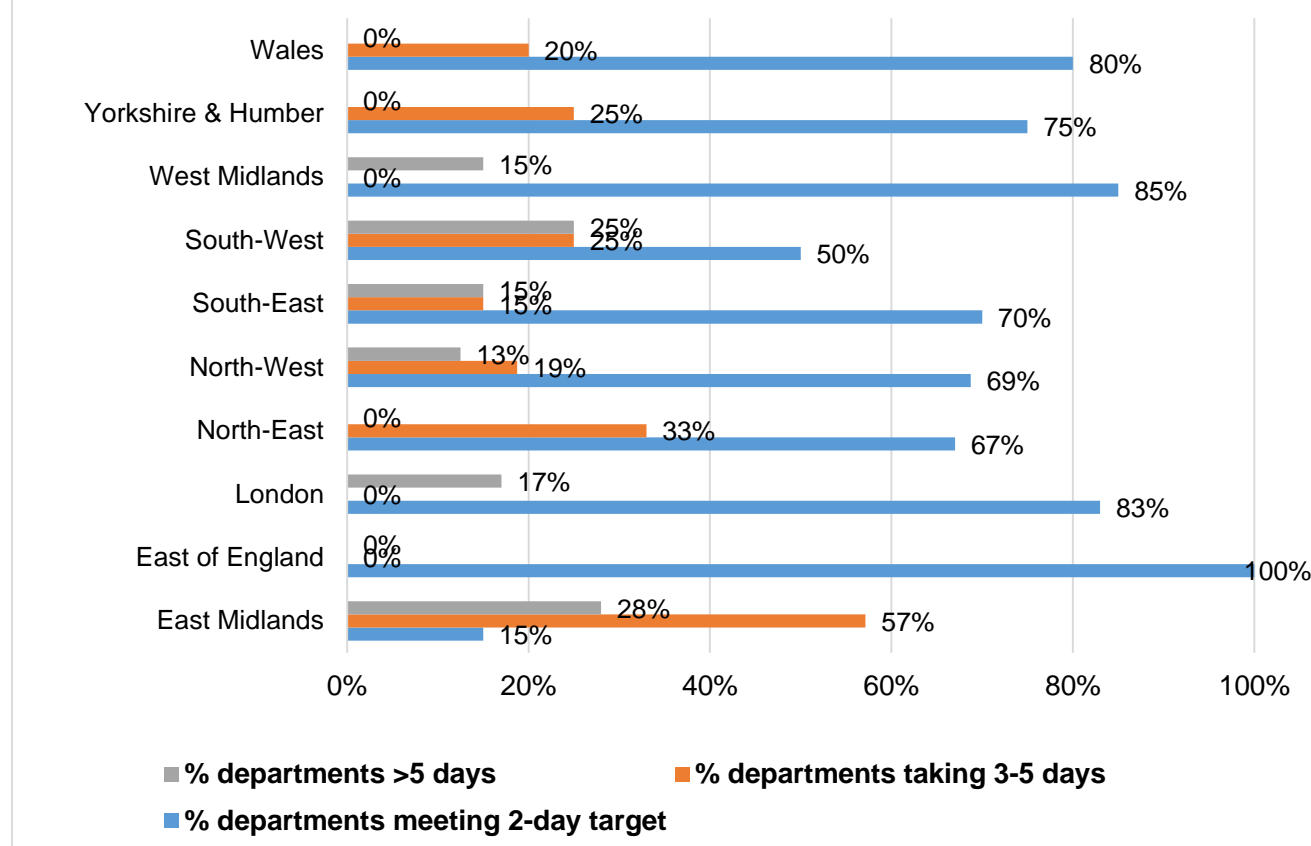
Regional variation in meeting turnaround target

Figure 7 indicates that there is quite a marked regional/country variation, with a range of 15-100% of departments across the regions able to produce a 2 working day autopsy turnaround, with a 0-57% regional variation for autopsies taking 3-5 working days and 0-28% variation in >5 working days.

All responding departments in the East of England reach the 2 working days target (100%), although Wales, London and West Midlands had a high (80%+) result. Interestingly, for London and West Midlands, if the 2-day target is missed, they then take >5 working days to complete the autopsies, with none taking the intermediate category of 3-5 working days.

Respondents in the East Midlands region gave a distinctly low response to the percentage of departments able to perform the autopsies within 2 working days (15%), with over half (57%) taking between 3-5 working days. Over a quarter of their departments (28%) take more than a week to complete the autopsies. South West also took more than 1 week in >20% of their departments.

FIGURE 7: Percentage of departments reaching the PM turnaround targets, by region/country

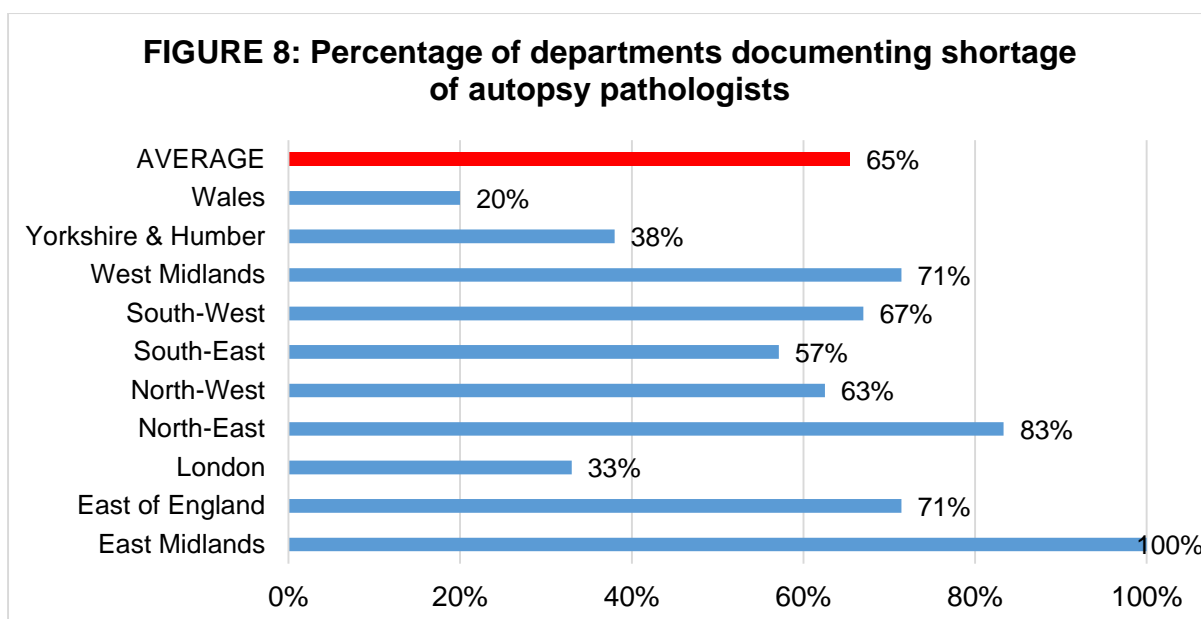


Potential shortage of pathologists to do PMs

65% of respondents stated that there was a shortage of pathologists to perform Coroner's post-mortems in England and Wales, i.e. only 35% of respondents said that there was no current shortage.

There is considerable regional variation (see **Figure 8**), with regards to departments stating if they have a current shortfall of pathologists to do the autopsy service; this is most marked in East Midlands (100% of departments), followed by the North East (83%), although 5 other regions (West Midlands, South West, South East, North West and East of England) have >50% of departments stating a shortfall of pathologists.

Wales, London and Yorkshire & Humber have lower levels of documented autopsy staffing shortfall (<40%).



The method of accommodating Coroner's PM in the job plan was compared with respondents stating whether they have adequate staffing. The following results were found:

Done in normal hours, time shifting work:	63% stated – shortage of pathologists Average 4.4 pathologists on roster
Outside of normal working hours:	100% stated – shortage of pathologists Average 3.7 pathologists on roster
Done in normal hours, minimal disruption:	57% stated – shortage of pathologists Average 4.6 pathologists on roster
Incorporated in NHS time:	50% stated – shortage of pathologists Average 3.3 pathologists on roster

There may be a suggestion that incorporating them in NHS time gives a better feeling of adequate staffing, as it is part of the regular job plan and dedicated time is given to them.

Performing Coronial autopsies outside of normal working hours is clearly a problem where it is the method of accommodating autopsies, with every department stating a staffing issue, possibility due performing them in anti-social hours, reducing flexibility of individuals to complete their NHS work (this flexibility is easier to achieve using the time shifting model).

Table 2 indicates "Adequate" and "Inadequate" staffing compared with autopsy timescales:

Departments	PMs timescale 0-2 days	PMs timescale 3-5 days	PMs timescale >5 working days	TOTALS
"Adequate" staffing	23 (82%)	5 (18%)	0 (0%)	28 (35%)
"Inadequate" staffing	32 (61%)	12 (23%)	9 (16%)	53 (65%)
TOTALS	55 (100%)	16 (100%)	10 (100%)	81

“Adequate” staffing but failing to reach the turnaround standard:

28 departments (35%) were thought to have adequate autopsy staffing, but only 23 (82%) departments were able to reach the 2 working day target, with 5 departments (18%) taking more than 2 working days to perform autopsies.

All 5 departments which failed to meet the 2 day standard used the time-shifting model, were all from different regions of the country (1 department from 5 different regions), and although there was an average of 5.2 pathologists on the roster (range 3-8, mode 4), only an average of 43% of employed pathologists undertook autopsies (range 33%-60%, median 40%), which meant these were likely relatively large departments, with large NHS workloads, and insufficient people in reality on the autopsy roster for the workload required.

The 5 departments had an 11% vacancy rate between them, with 7 vacancies in total between 3 of the departments (2 having 3 vacancies each), the 3 departments having an average 18% vacancy rate between them - this might explain the difficulty in maintaining autopsy turnaround standard for these 3 departments.

“Inadequate” staffing but reaching the turnaround standard:

32 departments stated they had inadequate staffing, but they did reach the 2 day target, which was a surprising finding. This represents 40% of all autopsy departments and 61% of all those who think they have problems with autopsy staffing, so most in this category reached the standards.

This could indicate that they are working excessive hours in order to meet the standards, they could be under pressure from the Coroner's service to perform the autopsies in a timely manner, or that the method of remuneration for the autopsies plays a part.

Broken down by region:

Wales:	3 departments	(60% of all departments)
East of England:	5 departments	(71% of all departments)
East Midlands:	1 department	(17% of all departments)
London:	1 department	(17% of all departments)
North East:	4 departments	(67% of all departments)
North West:	6 departments	(38% of all departments)
South East:	3 departments	(43% of all departments)
South West:	3 departments	(25% of all departments)
West Midlands:	4 departments	(57% of all departments)
Yorkshire & Humber:	2 departments	(25% of all departments)

The method of accommodating Coroner's PM in the job plan was compared with the turnaround standard target.

The following results were found:

Done in normal hours, time shifting work:	73% departments achieve 2-day target
Outside of normal working hours:	29% departments achieve 2-day target
Done in normal hours, minimal disruption:	86% departments achieve 2-day target
Incorporated in NHS time:	84% departments achieve 2-day target

The above data shows that incorporating them into NHS sessions is a method of job planning that allows better achievement of autopsy staffing and achieving the 2 day target. When feasible, the minimal-disruption method also is successful in this respect.

It seems that performing autopsies outside of normal working hours is the least successful way of achieving the 2 day turnaround target.

Staffing rostered numbers compared with overall turnaround of autopsies

Although there is a mean overall of 4.1 pathologists on the departmental autopsy roster, **Table 3** shows the breakdown against the departmental turnaround standard:

	PM timescale 0-2 working days	PM timescale 3-5 working days	PM timescale >5 working days	OVERALL Mean number of staff
Mean number of pathologists on rosters of all departments	4.4	3.7	2.1	4.1
Mean number on roster with departmental "shortage"	4.6	3.3	2.1	3.9
Mean number on roster with "adequate" staffing	4.2	4.8	X	4.4

This data highlights that the average number of rostered autopsy pathologists overall is significantly smaller in departments that are unable to meet the 2 working day target (4.4 versus 3.7 and 2.1 for 0-2, 3-5 and >5 working days respectively).

Interestingly, the mean number of rostered pathologists in departments that meet the 2 working day target, but with "inadequate" autopsy staffing is higher than those meeting the target and with "adequate" staffing (4.6 versus 4.2).

Broken down by numbers of pathologists on the autopsy roster:

Table 4 for departments where the 2 day target is met (42% "adequate", 58% "inadequate")

Number on the PM rota	"Adequate" staffing and meeting 2 day target	"Inadequate" staffing and meeting 2 day target
1-2	40%	60%
3	36%	64%
4	36%	64%
5	46%	54%
6	20%	80%
7	80%	20%
8 or more	25%	75%

Table 5 for departments with a 3-5 working day turnaround (19% “adequate”, 81% “inadequate”)

Number on the PM rota	“Adequate” staffing and meeting 2 day target	“Inadequate” staffing and meeting 2 day target
1-2	0%	100%
3	33%	67%
4	67%	33%
5	0%	100%
6		
7	0%	100%
8 or more	100%	0%

Table 6 for departments with a >5 working day autopsy turnaround (100% “inadequate”)

Number on the PM rota	“Adequate” staffing and meeting 2 day target	“Inadequate” staffing and meeting 2 day target
1-2	0%	100%
3	0%	100%
4	0%	100%
5	X	X
6	X	X
7	X	X
8 or more	X	X

Having more numbers on the roster does not automatically mean “adequate” staffing, as it is relative to the autopsy departmental workload and non-autopsy NHS workload. Having 5 or more on the roster seems to be the minimum necessary to allow autopsies to be done within 5 working days.

For departments which do meet the 2 day target, 58% feel they have inadequate staffing, and on comparing the total number of staff in these departments, they have an average of 10.8 members in post in these departments, compared to 10.4 staff members in departments who feel they have “adequate” autopsy staffing. Even comparing the proportion of staff doing autopsies, 52% of staff in post do autopsies in departments with an “autopsy shortage” compared to 47% in those with “adequate” staffing (where 2 day target is met).

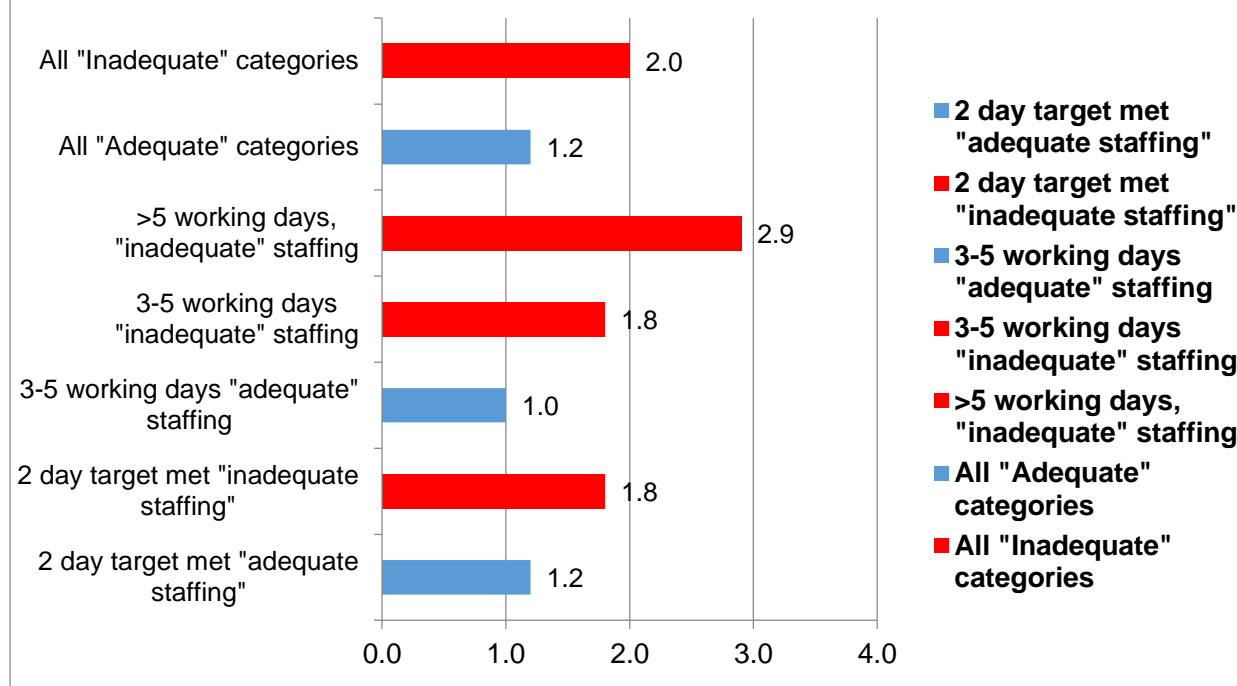
Therefore there must be other factors at play, to explain why these departments feel their autopsy staffing is “inadequate”, even though they meet the 2 working day target.

Role of vacancy numbers and vacancy rates

One potential factor could be the number of vacant posts in departments.

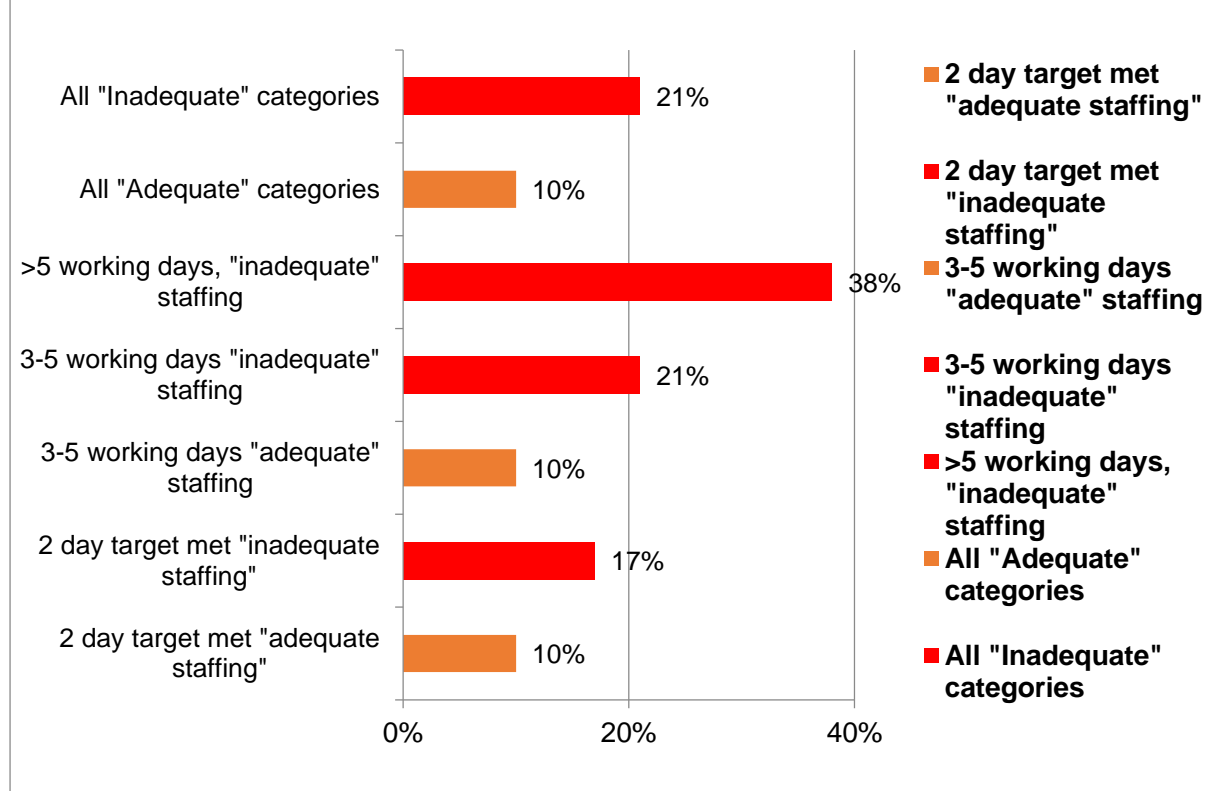
Figure 9 demonstrates that vacancy numbers and vacancy rates are higher in departments which rated their autopsy staffing rotas as “inadequate”, compared to those which felt they were “adequate”.

FIGURE 9: Mean number of vacant posts in departments



For departments meeting the 2 day target, departments with "inadequate" autopsy staff have almost twice the vacancy rates and numbers as those in "adequate" departments (17% versus 10%) and 1.8 vacancies versus 1.2 vacancies, as shown in **Figure 10**.

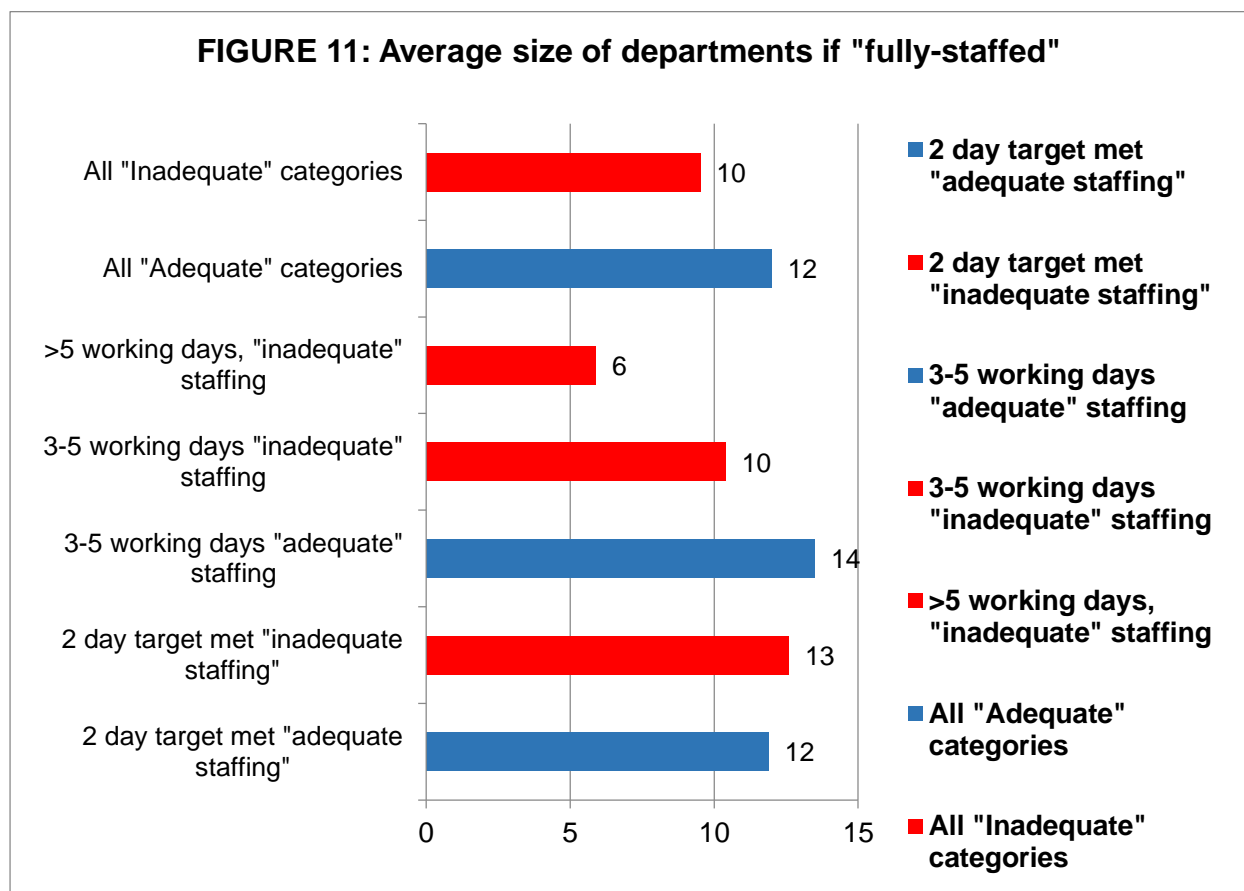
FIGURE 10: Percentage vacancy rate in departments



This trend is also noted where the 2 day target is unable to be met: where autopsies take 3-5 working days to be done, “adequate” staffed departments have a similar vacancy rate to those seen meeting the 2 day target (around 1 vacant post and 10% vacancy rate), and “inadequate” staffed departments have around 20% vacant posts (around 2 vacancies each).

Most notable is that departments taking >5 working days to perform their autopsies, have an extremely high vacancy rate (average 38%) and an average of 2.9 vacant posts.

With regards to fully staffed departmental numbers, there is not much difference between the average sizes of departments with “adequate” or “inadequate” autopsy pathologists (12 and 13 members), except that the “inadequate” group have almost twice the vacancy rate (10% and 17%). See **Figure 11** for more details:



With regards to those taking 3-5 working days to perform autopsies, the “inadequate” staffed departments seem to have a significant difference between the fully staffed numbers (10 versus 14) as well as having twice the vacancy rate (21% versus 10%), similar pattern to the 0-2 working days group of departments.

Those taking >5 working days seem to have smaller sized departments (average of 6 staff members if fully staffed), coupled with a very high vacancy rate (38%).

All these factors together, may go a way to explain why some departments meet the 2 day autopsy targets and why some do not.

The remaining unexplained group is the small group of respondents, who take 3-5 working days to do autopsies, but claim “adequate” staffing levels.

This is a small number of respondents and on further examination, are all from different regions, a mixture of DGHs and Teaching Hospitals. 2 of the 4 departments have 17-21% vacancy rates, thus would fulfil the criteria for “inadequate” staffing, as documented above, but have categorised themselves as “adequate” – perhaps difficult to justify, given the failure to reach the target.

SUMMARY OF MAIN FINDINGS

1. 86% of departments perform autopsies for HM Coroner in England and Wales.
2. Approximately 458 pathologists currently perform autopsies in England and Wales.
3. Approximately 46% of pathologists perform autopsies in departments which provide autopsy services for HM Coroner, which represents around 36% of all pathologists.
4. East of England have the highest proportion of pathologists still undertaking autopsies (almost 60%), with lowest levels seen in the North East and East Midlands (<40%), and London (although this may be due to use of public mortuaries).
5. Almost 75% of departments accommodate Coronial autopsies by performing them in the normal working hours, time-shifting other work; the other 25% are split evenly between departments who perform autopsies out of hours, incorporate into NHS time and use the minimal disruption model.
6. Average of 4.2 pathologists on typical autopsy roster, median 3.5, modes 3 and 5, with most rotas staffed by between 2 and 5 pathologists (70% of all PM departments)
7. Significant regional variation in rostering numbers, between 3.0 and 5.7 average rostered numbers, on comparing all the regions and Wales.
8. If 25% gave up autopsy practice in the near future, then the proportion of all pathologists undertaking them could drop from 36% to 25%, and a drop from 46% to 35% in departments where autopsies are performed.
9. Potentially 115 pathologists could give up autopsy practice in the near future, 458 dropping down to 343 pathologists, in England and Wales.
10. Departments incorporating autopsies into the NHS time or using a minimally-disruptive model, are on average staffed by fewer pathologists than those using the common time-shifting model and performing autopsies out of normal working hours.
11. 68% of departments meet the standard of performing autopsies within 2 working days of receiving the request from HM Coroner, although 11% took more than 1 week to undertake the autopsies.
12. Minimum of 5 pathologists needed on rota, to avoid cases taking >1 week to do.
13. Average roster sizes seem to be smaller in departments failing to reach 2 day target.
14. Around 50% or more, on average, of staff members, will perform autopsies, in departments which meet the 2 day target, whilst this figure is closer to 40% in departments which fail to meet the 2 day target.
15. Departments much more likely to meet the 2 day target have 70% or more of their staff doing autopsies.
16. There is a marked regional variation in the percentage of departments reaching the 2 day standard; highest in East of England, followed closely by Wales, London and West Midlands, but East Midlands had a very low compliance level for 2 day turnarounds.

East Midlands and South West had >20% of their departments taking over 1 week for the autopsies.

17. 65% of departments stated there was a staffing shortage in autopsy pathology.
18. There is a marked regional variation seen, with 100% of responding departments in East Midlands stating there was a shortage of autopsy pathologists, followed by >80% departments in the North East, and >50% in West Midlands, South West, South East, North West and East of England.
19. Fewer than 50% of departments in Wales, London and Yorkshire & Humber stated there was a staffing shortage in autopsy pathology.
20. 100% of departments which perform autopsies outside of normal working hours stated there was insufficient autopsy staff, whilst only 50% of departments stated this if autopsies were incorporated into NHS time.
21. 18% of those with “adequate” staffing levels failed to reach the 2 working day target.
22. 61% of those with “inadequate” staffing levels did reach the 2 working day target.
23. Rosters >4 pathologists, on average, are more likely to meet 2 day target, whilst roster with <3 pathologists on average, will fail to complete autopsies in less than 1 week.
24. However, having an average of >4 pathologists on rosters does not guarantee that the departments feel there is sufficient staffing for their autopsy work or that the 2 day target will be met.
25. Departments which meet the 2 day target, but have “inadequate” autopsy staff have almost twice the vacancy numbers and percentage rate (17% compared to 10%) than departments which have “adequate” autopsy staff numbers.
26. This pattern was also noted in those taking 3-5 working days to perform autopsies, with the likelihood of stating “adequate” or “inadequate” staffing dependent on their vacancy rates (20% versus 10%).
27. Departments taking > 1 week to perform autopsies have an exceptionally high average vacancy rates (38%), and high number of actual vacancies, and are likely to be smaller-sized departments.
28. 4 departments took 3-5 working days to undertake autopsies, but stated their autopsy staffing was “adequate” – 2 of these 4 departments had 17-21% vacancy rates, which may be the explanation for the delayed turnaround.

Source: RCPATH workforce survey of Cellular Pathology Departments 2017