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Research paper

Protected therapy services for critical care: A subanalysis of the UK-wide workforce survey

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ABSTRACT

Background: The existing United Kingdom (UK) allied health professional (AHP) workforce in critical care does not meet national standards, with widespread variation in the source of funding, service availability, and regularity of input.

Objectives: The aim of this subanalysis was to determine the impact of protected services on the involvement of AHPs on direct and nondirect aspects of patient care.

Methods: This is a subanalysis of the previously published AHPs in critical care UK-wide workforce survey, an observational study using online surveys distributed to 245 critical care units across the UK.

Results/Findings: Services with protected funding provided more daily input within critical care. This was most apparent for occupational therapy where daily input varied from 82.1% of units with protected services compared to just 10.3% in those without ($p < 0.001$). For all professions, most notably occupational therapy and speech and language therapy, protected services increased the regularity in which specific interventions were completed and had impact on involvement in nonclinical aspects of care including involved in multidisciplinary team meetings, clinical governance, and research.

Conclusions: The absence of protected AHP services reduces compliance with national standards for therapy workforce. Based on these findings, UK and international critical care guidelines should promote protected AHP services for critical care.

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1. Introduction

With increasing focus on survivorship following critical illness, the requirement for allied health professionals (AHPs) working within the critical care multidisciplinary team continues to have increasing focus.¹ However, despite the increasing evidence base regarding rehabilitation and recovery, there remains no standardised model for AHP services for critical care, with only a few nations suggesting recommended workforce numbers.

Within the United Kingdom (UK), national guidelines support proposed staffing models for AHPs working in critical care^{2,3} and provide recommendation of potential roles and responsibilities.^{4,5} However, there remains a lack of data to demonstrate compliance with these recommendations.^{6,7} Indeed, in our recent UK-wide AHP workforce survey,⁸ we identified ongoing significant shortfalls in staffing, with resulting impact on patients being able to access services and inability for AHPs to be involved in nonclinical activity such as research and quality improvement.

These findings replicate international studies exploring AHPs in critical care. Within physiotherapy, widespread variation in workforce ratios has been observed, ranging from one physiotherapist to every four patients (1:4)⁹ to 1:50.¹⁰ Furthermore, studies have shown that there is a larger workforce in larger cities with teaching/academic hospitals than in more rural areas.¹¹ Less is known for

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other therapies, with only a few studies exploring workforce for speech and language therapy (SLT)¹² and dietetics.¹³

In addition to these findings, the UK survey also demonstrated that the source of funding, and hence potential to protect services, is a significant factor in determining staffing ratios. This was particularly apparent for occupational therapy (OT) and SLT⁸ where staffing ratios varied from 1:42 and 1:30 for protected services to 1:90 and 1:158 for nonprotected, respectively. These findings were supported in our exploration of AHP views of practice with critical care¹⁴ in which therapy staff highlighted funding and particularly source of funding/protected services as having a significant impact on services delivered.

Traditionally, critical care services directly fund medical and nursing staffing, whereas professionals from the wider multi-professional team including AHPs may receive their funding through a variety of sources. These funding sources are often challenging to fully interpret; however, the impact is that some AHP services may receive funding directly from critical care and hence are 'ring-fenced' or protected to the critical care service, whereas others are generated through more generic funding sources and therefore do not have the same level of protected service provision and are influenced by AHP service directives and service needs.¹⁵

To our knowledge, the impact of the source of funding and likely protection of services has not previously been explored within critical care either in the UK or internationally, nor is it considered in any national guidance documents. Outside of critical care, scant literature exists. In exploring why stroke survivors did not receive recommended amounts of active therapy, the ReACT study¹⁶ identified staffing levels and deployment as an influencing factor, as well as time spent on other non-patient contact tasks. Whilst occupational therapists and physiotherapists were commonly colocated on stroke units, this was less common for SLT where individuals or teams were often covering multiple services across the whole hospital and community.

Based on the above, the aim of this subanalysis was to explore the impact of having protected AHP services on (i) the ability to provide regular input to patients admitted to critical care, (ii) the impact on assessments and interventions undertaken, and (iii) to review its impact on involvement in nonclinical activities.

2. Methods

2.1. Study design

This was a subanalysis based on a previous observational study using an online survey

2.2. Setting

The study setting involved critical care units across the UK identified through existing critical care networks in England, Northern Ireland, Scotland, and Wales.

2.3. Participants

Participants were AHPs working within critical care based in the UK. Potential participants were included regardless of the number of years post graduation or critical care experience to ensure the dataset was comprehensive.

2.4. Development of surveys

A detailed overview of the development of the surveys has previously been published.⁸ Five profession-specific surveys were

developed to capture information regarding AHP roles. The chief investigator devised the surveys based on previous examples,^{6,17–19} with each survey containing identical overarching questions. Once developed by the chief investigator, all draft surveys were reviewed and adapted based on feedback from the research group with profession-specific surveys being reviewed by relevant professionals. A pilot study was completed within two NHS critical care networks (NHS Wales Critical Care Network & North-West London Critical Care Network) to ensure the method of distribution and the survey content were appropriate. All surveys were managed by Online Surveys (<https://www.onlinesurveys.ac.uk/>).

For this subanalysis, only those surveys relating to dietetics (DT), OT, physiotherapy (PT), and SLT were used. The psychology discipline was not included as this discipline also provided services to staff, whereas the other disciplines solely provided care and treatment to patients.

2.5. Distribution method

Within the UK-wide workforce survey,⁸ hospitals with at least one critical care unit were identified by the lead AHP of each critical care network, who provided a contact for each hospital. The research team contacted each named hospital contact and provided information regarding the survey, process for distribution to each of the professions, and links to each survey. Only one response was required per profession per critical care unit. The surveys were open for a 12-week period from November 2020 to February 2021. Reminders were sent at 4 and 8 weeks via email to the named hospital contact. No new distribution was required for this subanalysis with all data utilised from the previously collected surveys.

2.6. Quantitative variables

Critical care beds in the UK are designated as level 2 or level 3.²⁰ Unlike previous surveys,⁶ total bed numbers were used rather than 'level 3 bed equivalents'. This was to ensure more accurate staff-to-patient ratios, especially for units tending to have more level 2 admissions. One whole time equivalent (1.0 WTE) was 37.5 h/week.

For questions exploring direct and nondirect roles, participants were able to respond as 'never', 'rarely', 'sometimes', 'fairly often', and 'very often'. For analysis, these were further categorised into two distinct categories: (i) for 'never', 'rarely', and sometimes and (ii) for 'fairly often' and 'very often'.

2.7. Statistical methods

Anonymised survey data were initially analysed using Microsoft Excel. Descriptive statistics are calculated as percentages based on total responses received for each profession, with frequencies also recorded. Data were then transferred to IBM SPSS Statistics for Windows (version 26.0) for statistical testing. The two-tailed Fisher's exact test of independence was used to determine whether the survey responses were different for those with protected AHP services compared to those without protected AHP services. A threshold of $p \leq 0.05$ was used throughout to determine the significance of these comparisons.

2.8. Ethics approval

This study was discussed with the local research and development department and Health Care Research Wales and deemed not to require full ethical application. All information collected was routinely collected data, and no identifiable data were used within the analysis or manuscript.

3. Results

This subanalysis included 731 responses from all AHPs. These contained data for 197 of the 245 (80.4%) hospitals identified through the initial recruitment process, with some hospitals providing responses from more than one critical care unit. The responses from each profession were as follows: 169 dietetics services, 176 OT, 213 PT, and 173 SLT services.

3.1. Staffing ratios

Staffing ratios have been previously reported⁸ but are summarised in Table 1, including an overview of the number of protected versus nonprotected services.

3.2. Direct patient contact

The regularity of AHP involvement in direct patient contacts was influenced by funding type (see Fig. 1). This was particularly noticeable for OT and SLT where the ability to provide at least daily input to critical care varied from 10.3% ($n = 6/58$) and 16.0% ($n = 21/131$), respectively, for units where services were not protected compared to 82.1% ($n = 32/39$) and 60.5% ($n = 23/38$) ($p < 0.001$ for both OT & SLT) where protected services existed. Fig. 1 demonstrates the frequency in which each profession provided at least daily input to the critical care unit.

For each profession, the regularity of completing interventions was affected by the presence of protected services. For OT and SLT, these differences were statistically significant for all interventions even those reported as most frequently completed (see Table 2). For example, in services with protected funding, 81.6% ($n = 31/38$) of OT services were frequently (either very often or often) involved in personal activities of daily living, whereas this was only reported as frequently completed in 41.7% ($n = 25/60$) of services without protected services ($p < 0.001$). Similar findings were observed for SLT, including involvement in trialling one-way valves ('speaking valves') which was reported as completed frequently in 81.6% ($n = 31/38$) of responding SLT services from protected services versus 37.5% ($n = 48/128$) in nonprotected services ($p < 0.001$).

Dietetics reported smaller, nonstatistically significant differences, with protected services having less of an impact on the regularity of intervention completion. PT reported significant differences between protected and nonprotected services for airway suctioning ($p = 0.010$) and mobilising a patient that is ventilated via a tracheostomy in the bed and out of the bed only ($p = < 0.001$ and $p = 0.008$, respectively).

3.3. Nondirect roles and responsibilities

Frequency of involvement in nondirect roles and responsibilities is shown in Table 3. For all AHPs, except SLT, the frequency of nondirect patient activity was higher in units with protected services.

Table 1

Staff-to-bed number ratios in protected and nonprotected services.

	Number of units with service provision (N)	Of those, percentage of units with protected funding, % (N)	Staff-to-bed number ratio: Protected funding	Staff-to-bed number ratio: No protected funding	GPICS
Dietetics	165	55.8% (92)	1:24.7	1:29.8	1:10
OT	104	36.5% (38)	1:41.5	1:90.1	1:10
Physiotherapy	212	61.8% (131)	1:6.8	1:17.3	1:4
SLT	168	22.6% (38)	1:30.0	1:157.6	1:10

OT, occupational therapy; SLT, speech and language therapy; GPICS, Guidelines for the Provision of Intensive Care Services.²

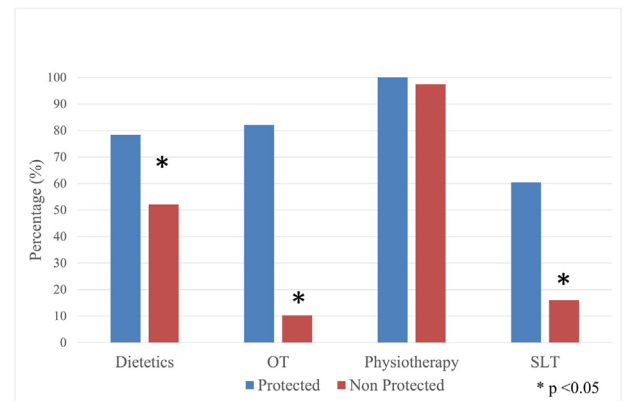


Fig. 1. Percentage of therapy services providing at least daily input depending on whether protected or not protected. OT, occupational therapy; SLT, speech and language therapy.

Involvement in nondirect activities associated with clinical governance and research was less frequent for all professions (protected or nonprotected) than those associated with clinical care, e.g., multi-disciplinary team (MDT) meetings. This was particularly apparent for OT, with only 10.8% ($n = 4/37$) of protected OT services having regular input to research processes, reducing to zero in nonprotected services ($p = 0.023$). Conversely, each profession was more likely to be involved in activities associated with clinical care, e.g., multidisciplinary team meetings, ward rounds, and morning handovers.

However, and in contrast to all other professions, for SLT, higher involvement (often significant differences) in nondirect patient activity was frequently observed in nonprotected services. For example, 2.6% ($n = 1$) of those with a protected service were regularly involved in clinical governance processes versus 16.3% ($n = 21$) of those without a protected service ($p = 0.029$).

4. Discussion

We recently reported that UK AHP workforce ratios did not meet national guidelines² and identified that these AHP-to-patient ratios were worse where services were not protected or protected. This subanalysis has added to that evidence base, demonstrating that protected services appear to be able to provide input to patients on a more regular basis, deliver profession-specific interventions more frequently, and may be more involved in nondirect aspects such as MDT and governance meetings.

4.1. Direct patient contact

Within this subanalysis, the regularity of interventions delivered appeared to be different in protected services compared to those without. This was particularly apparent for both OT and SLT and was likely further compounded by the known ongoing shortfall

Table 2
Frequency of 'often' completing interventions for all AHPs depending on the presence of protected funding.

	Protected funding, % (n)	Not protected funding, % (n)	p-value*
Dietetics			
Estimating energy and protein targets	100 (92/92)	97.2 (69/71)	0.188
Assessing biochemistry	100 (92/92)	98.6 (70/71)	0.436
Assessing gastrointestinal function & enteral feed tolerance	100 (92/92)	98.6 (70/71)	0.436
Developing enteral feeding regimens	98.9 (91/92)	97.2 (69/71)	0.581
Advising on indications and contraindications of oral nutritional intake and adequacy	96.7 (89/92)	90.1 (64/71)	0.105
Occupational therapy			
Sitting out in a chair	84.2 (32/38)	47.4 (27/56)	<0.001
Personal activities of daily living (e.g., washing/feeding)	81.6 (31/38)	41.7 (25/60)	<0.001
Positioning	78.9 (30/38)	46.7 (28/60)	0.002
Sitting on the edge of the bed	78.9 (30/38)	42.4 (25/59)	<0.001
Family engagement	65.8 (25/38)	37.9 (22/58)	0.012
Physiotherapy			
Airway suctioning	100 (129/129)	94.9 (74/78)	0.019
Mobilising a patient who is self-ventilating patient, out of bed	99.2 (127/128)	98.7 (77/78)	1.00
Mobilising a patient who is ventilated (tracheostomy), in the bed	98.2 (126/128)	85.9 (67/78)	<0.001
Mobilising a patient who is ventilated (tracheostomy), out of bed	96.0 (123/128)	85.9 (67/78)	0.013
Mobilising a patient who is self-ventilating patient, in the bed	94.4 (120/127)	92.2 (71/77)	0.562
Speech & language therapy			
Communication assessment	81.6 (31/38)	27.7 (36/130)	<0.001
One-way valve trials (tracheostomy)	81.6 (31/38)	37.5 (48/128)	<0.001
Cuff deflation trials	81.1 (30/37)	33.3 (43/129)	<0.001
Active involvement in weaning decisions	78.9 (30/38)	27.9 (36/129)	0.001
Yankauer suction	76.3 (29/38)	31.8 (41/129)	<0.001

AHP, allied health professional.

*Two-tailed Fisher exact test with $p \leq 0.05$ statistical significance.

in workforce.^{6,7,14} Reduced staffing levels are well known to impact treatment delivery,^{16,21} and conversely, temporary increases in staffing are associated with increases in AHP input, both in terms of regularity and duration.^{22–25}

Several guidelines² and studies^{13,14,26–31} have identified the likely roles for each AHP to undertake; however, within the current study, evidence of compliance with these suggestions seems to be variable. For example, within the standards, the Guidelines for the Provision of Intensive Care Services (GPICS)² states SLTs should contribute to a suitable tracheostomy or noninvasive ventilation weaning plan for complex or long-stay patients. Those centres with protected SLT services appear compliant with this standard, with 81.1% ($n = 30/37$) of units reporting regular use of one-way valve trials and 81.1% ($n = 30/37$) regularly involved in cuff deflation trials, compared to only 37.5% ($n = 48/128$) and 33.3% ($n = 43/129$), respectively, for units without protected services ($p < 0.001$ for both). This is not isolated to SLT, with similar findings in OT, e.g., personal activities of daily living; regular use in 81.6% ($n = 31/38$) of protected services versus 41.7% ($n = 25/60$) in nonprotected ($p < 0.001$), and to a lesser degree in PT, e.g., mobilising a patient who is ventilated via tracheostomy, out of bed, 96.0% ($n = 123/128$) v 85.9% ($n = 67/78$), respectively ($p = 0.013$). Interestingly, the five most frequently utilised dietetic interventions were not statistically different in protected and nonprotected services. This may be a result of more clearly defined roles, with each being key components of all dietetic assessments, implementation, and monitoring of critical care patients.³² However, for the advanced skills and extended scope roles, there was a marked difference, suggesting the presence of protected services allows the development of advanced, expert dietetic practitioners.

The impact of this variability in intervention delivery has not been captured by this workforce survey. However, it could be suggested that the inability to deliver evidence-based interventions^{13,27,30,33} on a regular basis will be having a detrimental effect on patient outcomes, particularly those focused on

functional performance markers, delirium management, and weaning (both ventilator and tracheostomy), all of which will have an influence on critical care and hospital length of stay.^{23,34–37} Furthermore, the inability to provide timely and consistent interventions associated with communication will affect ability to engage in rehabilitation and adversely affects interactions between patients and staff.³⁸

4.2. Nondirect roles and responsibilities

As with direct patient contact, involvement of AHPs in nondirect roles and responsibilities appears affected by the presence, or absence, of protected services. For all AHPs, the GPICS² states there should be an identifiable lead with appropriate experience, who will be accountable for service provision and development. Additionally, all AHPs should be present at multidisciplinary discussions and other patient-related meetings and involved in governance, quality improvement, and research processes. Furthermore, in our qualitative review,¹⁴ clinicians from all AHP backgrounds highlighted the need to be involved in these areas to ensure service quality, generation and delivery of evidence-based practice, and role progression.

Within this study, the presence of protected services appeared to have a notable impact on involvement in nonclinical aspects, which was similar across the professions except for SLT. Of specific note, regular involvement in MDT meetings which is highlighted in national guidelines² occurred far more frequently in protected services.

Despite being highlighted in the UK guidelines,² frequent attendance at MDT ranged from 66.7% ($n = 24/36$) for OT to 31.6% ($n = 12/38$) for SLT in protected services compared to 41.4% ($n = 29/70$) for dietetics to 20.7% ($n = 12/58$) for OT in nonprotected services. Statistical differences in involvement in MDT were observed for dietetics and OT ($p = 0.004$ and $p = <0.001$, respectively), suggesting more involvement by protected services, although an

Table 3
Involvement in nondirect activity.

	D		OT		PT		SLT		
	Protected, % (n)	Nonprotected, % (n)	Protected, % (n)	Nonprotected, % (n)	Protected, % (n)	Nonprotected, % (n)	Protected, % (n)	Nonprotected, % (n)	
Clinical care	Multidisciplinary team meetings	65.2 (60/92)	41.4* (29/70)	66.7 (24/36)	20.7* (12/58)	54.5 (67/123)	47.3 (35/74)	31.6 (12/37)	35.7 (46/129)
	Complex case meetings	20.9 (19/91)	14.7 (10/68)	51.4 (18/35)	10.2* (6/59)	38.8 (47/121)	32.9 (25/76)	13.2 (5/38)	23.6 (30/127)
	Morning handover rounds with the MDT	22.2 (20/90)	15.5 (11/71)	43.2 (16/37)	10.5* (6/57)	53.5 (68/127)	41.1 (30/73)	5.4 (2/37)	10.4 (13/125)
	Ward rounds	20.7 (19/92)	22.5 (16/71)	13.9 (5/36)	7.1 (4/56)	11.0 (14/127)	9.3 (7/75)	0.0 (0/38)	4.7 (6/127)
	Discharge meetings	8.9 (8/90)	1.4 (1/70)	38.2 (13/34)	6.8* (4/59)	6.3 (17/106)	14.9 (10/67)	0.0 (0/38)	10.4* (13/125)
Clinical governance	Tracheostomy rounds	2.5 (2/80)	0.0 (0/62)	3.1 (1/32)	0.0 (0/54)	30.7 (23/75)	27.5 (14/51)	8.1 (3/37)	26.7* (31/116)
	Family meetings	7.6 (7/92)	1.4 (1/71)	36.1 (13/36)	6.8* (4/59)	6.3 (8/126)	6.5 (5/77)	2.6 (1/38)	12.4 (16/129)
	Clinical governance processes	35.9 (33/92)	20.0* (14/70)	27.8 (10/36)	5.3* (3/57)	37.0 (47/127)	18.2* (14/77)	2.6 (1/38)	16.3* (21/129)
	Clinical guidelines	22.2 (20/90)	12.9 (9/70)	16.2 (6/37)	1.8* (1/56)	10.3 (13/126)	2.7 (2/73)	0.0 (0/38)	7.8 (10/128)
Research, audit & quality improvement	Morbidity and mortality processes	15.7 (14/89)	5.7 (4/70)	16.7 (6/36)	1.8* (1/56)	10.3 (13/126)	5.4 (4/74)	0.0 (0/38)	4.7 (6/129)
	Business meetings	14.3 (13/91)	14.5 (10/69)	11.1 (4/36)	1.8 (1/56)	12.6 (16/127)	2.8* (2/72)	2.6 (1/38)	6.2 (8/129)
	Quality of audit processes	23.9 (22/92)	12.7 (9/71)	25.0 (9/36)	3.5* (2/57)	16.4 (21/128)	6.6 (5/76)	0.0 (0/38)	8.5 (11/129)
	Research processes	12.5 (11/88)	8.8 (6/68)	10.8 (4/37)	0.0* (0/56)	4.8 (6/124)	0.0 (0/73)	0.0 (0/38)	3.1 (4/128)

OT, occupational therapy; PT, physiotherapy; SLT, speech and language therapy.
*Two-tailed Fisher exact test with $p \leq 0.05$ statistical significance.

opposite (nonsignificant) difference was observed for SLT with greater attendance in nonprotected services ($p = 0.701$).

Based on these findings, it is suggested that, in general, critical care AHP services are not compliant with the recommendations of national guidelines,² or at best only partially compliant. Furthermore, the lack of shared discussion that occurs in MDT meetings may conversely increase the number of additional information exchanges required¹⁶ and reduce the collaborative nature of therapy services.^{14,34}

Across the UK and internationally, AHPs have strong histories of involvement within critical care research. Within the UK, AHP involvement in research is reflected within the pillars of practice and national frameworks.³⁹ However, the current study identified minimal involvement in research processes across all professions. There was similar, nonstatistically different, involvement in protected and nonprotected services for dietetics, PT, and SLT ($p = >0.05$), with OT responses reporting 10.8% ($n = 4/33$) of involvement in protected services and zero involvement when there is no specific funding ($p = 0.023$). These findings are also supported by research involving the host nation exploring the involvement of nursing and AHPs in research within critical care.⁴⁰

Involvement in nondirect activity between protected and nonprotected services seemed to be different for SLT compared to the other professions. For SLT, involvement appeared to be higher where services were not protected. The reasons for this have not been fully explored, but potential reasons may include SLT services utilising these nondirect activities to provide more strategic input where necessary or to utilise MDT meetings, ward handovers, etc., to gain information on individual patient progress and to provide more targeted input given the lower workforce.

Further work is needed to determine the value of involvement of AHPs in these nondirect roles, and further investigation is needed particularly in those critical care units with higher levels of involvement to determine the need and impact.

4.3. Limitations

The limitations of the UK-wide AHP workforce survey have previously been reported,⁸ which included reduced response rates from some professions (although overall response from critical care units was over 80%) and the timing of the survey completion during the COVID-19 pandemic. Furthermore, participants' responses were grouped into fewer categories for analysis. Whilst this was done to reduce the number of data points presented and to provide an overall impression of the existing workforce, there is potential that responses such as 'sometimes' may have been misrepresented as occurring more frequently than intended by the participants. However, given this remained constant for both the protected and nonprotected analysis, the impact will have been minimal especially for direct comparison.

For the subanalysis, the aim was to compare protected and nonprotected services; however, because of the variation in staffing ratios, it is likely this analysis is also a comparison of services with higher and lower ratios. This requires further exploration through future research. Whilst it could be argued that worse AHP-to-patient ratios will impact the ability to review patients more frequently or be involved in nondirect activities, it could also be argued that staffing ratios are worse because of the absence of a protected service, e.g., staff members become redeployed to other clinical priorities (e.g., occupational therapists being redeployed to other clinical areas to focus on patient discharges or nonclinical tasks and hence cause a reduction in involvement in critical care activity).¹⁴ Additionally, in the absence of a protected service, AHPs may be unclear as to what provision should be provided to critical care.¹⁶ Similarly, the absence of a protected service results in

challenges in developing and maintaining the specialist skills required for therapists to work within critical care, hence further reducing likely involvement. In addition to the above, the data analysis process did not control any confounding variables or factors which may have influenced either workforce numbers or involvement in direct or nondirect patient care. This lack of control of confounders must be considered within the validity of the conclusions drawn and the strength of the associations reported.

This subanalysis and original study⁸ were completed within the National Health Service in the UK, with comparison to the UK national guidelines. The generalisability of these findings to other countries and national guidelines is yet to be determined, and indeed to our knowledge, this is the first such exploration of the issue. However, given the known widespread variation in AHP workforce shown in international studies, it is likely that protected services still have an impact on AHPs working within critical care internationally.

4.4. Further research

This subanalysis has demonstrated the impact of protected AHP services on regularly of patient reviews and profession-specific interventions, as well as involvement in nonclinical activities. Further research is now required to determine whether this increased involvement in both direct and nondirect patient care results in improved patient and service outcomes and to identify service models which demonstrate best healthcare value. Further research is also required to compare these findings to other nations, particularly those that have already explored the minimum standards for AHP practice in critical care^{28,29} and those with national guidance for workforce ratios.

5. Conclusions

Existing UK AHP services in critical care do not appear to be compliant with national guidelines and recommendations. In this subanalysis, the absence of protected AHP services seemed to further reduce this compliance, in terms of review regularity, delivery of AHP-specific interventions, and involvement in nondirect aspects of critical care services. Whilst the impact of this lack of compliance needs further exploration, based on our findings, future national and international guidance documents and service delivery models must consider incorporating protected AHP services.

Data availability

Raw data are available by direct request to the corresponding author.

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No funding was provided for the completion of any aspect of the original UK-wide workforce survey or this subanalysis.

CRediT authorship contribution statement

Paul Twose: Conceptualisation, Methodology, Formal analysis, Writing – Original Draft, Writing – Review & Editing; **Ella Terblanche:** Conceptualisation, Methodology, Formal analysis, Writing – Review & Editing; **Una Jones:** Conceptualisation, Methodology, Formal analysis, Writing – Review & Editing; **Penelope Firshman:** Conceptualisation, Methodology, Writing – Review & Editing; **Judith Merriweather:** Conceptualisation, Methodology, Writing – Review & Editing; **Claire Rock:** Conceptualisation, Methodology,

Writing – Review & Editing; **Sarah Wallace:** Conceptualisation, Methodology, Writing – Review & Editing

Conflict of interest

None of the authors have any declarations of conflict of interest

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