# AEs and APs – Jacks of all trades but masters of none?

**Andrew Poplett IEng, MIHEEM, an Authorising Engineer (W&V) with over 30 years' healthcare estates management experience, and specialist knowledge of fire safety, water, and critical ventilation systems, discusses ensuring that hospitals and other healthcare facilities have a good mix of skills, knowledge, and experience available in such key disciplines via Authorising Engineers and Authorised Persons. He also warns against overburdening such personnel with an unrealistic workload.**

This article has been produced to highlight the issues associated with the provision of resources and identified specific role holders for both Authorising Engineers (AEs) and Authorised Persons (APs) within healthcare premises. It is intended to stimulate debate, and readers are encouraged to submit their own thoughts and ideas on the topic through the IHEEM Ventilation Technical Platform, to canvas the opinions of the IHEEM community as to the issue, and the potential need to provide formal guidance or standards on the subject. The opinions set out are mine; they do not represent any formal position of IHEEM or any other professional organisation or society, but rather are intended to highlight a current and ongoing issue.

## Issues due to staff and skill shortages

Although the need for AEs and APs is generally well understood, and defined within many of the current HTM guidance documents, increasingly issues are arising due to staff and skills shortages that are seeing an evolving situation where the level of responsibility held by a small number of single technical professionals exceeds the practical limits of both their skills / knowledge levels and time availability. In this article I will therefore set out my standpoint on suitable limits for these roles, depending upon key influencing factors such as the size or complexity of both the roles and the healthcare setting in question.


HTM 00 – *Policies and Principles of Healthcare Engineering* (2014) – outlines the role of an AE.

## Disciplines which may require an AE and AP

Some roles have been specifically outlined either within legislation or Health Technical Memoranda (HTMs) (or both), while others are included in Figure 1, as they are known areas where a suitably qualified and experienced individual is either implied or required to provide assurance of compliance.

| Technical Area | Status | Comment |
|---|---|---|
| Decontamination | HTM | Not present in all healthcare settings |
| Medical Gases | HTM | Not present in all healthcare settings |
| Ventilation (critical) | HTM | Not present in all healthcare settings |
| Water | Legal/HTM | Applies in all healthcare settings |
| Fire | Legal/HTM | Applies in all healthcare settings |
| Electrical (LV) | Legal/HTM | Applies in all healthcare settings |
| Electrical (HV) | Legal/HTM | Not present in all healthcare settings |
| Lifts/LOLLER | Legal/HTM | Not present in all healthcare settings |
| Pressure Systems | Legal/SHTM | Not present in all healthcare settings |
| Asbestos | Legal | Not present in all healthcare settings |
| Confined Spaces | Legal/SHTM | Not present in all healthcare settings |
| Environmental/Energy /Carbon Reduction | HTM | Emerging priority and applies in all healthcare settings |

Figure 1: Disciplines in healthcare facilities which may require an AE / AP.

## Classification of healthcare premises

As should be clear from the above, not all healthcare sites will have all of the technical areas shown in Figure 1. However, the number and range of technical disciplines under the auspices of a healthcare engineering or healthcare estates team at any given healthcare facility is not the sole influencing factor in ensuring an effective AE/AP service provision. The size and complexity of the site has a significant impact on the remit and scope of the role. On this basis, the following classifications have been used to inform the recommended role limits:

- Large acute or teaching hospital.
- Medium multi-service or District General Hospital.
- Small multi-service or inpatient Community Hospital.

| | Large acute or Teaching Hospital | Medium multi-service or District General Hospital | Small multi-service or inpatient community hospital | Large/medium primary care non-residential site | Specialist hospital | Large/complex mental health or learning disability hospital | Medium/small mental health or rehabilitation hospital | Multi-site non-residential small sites (community premises) |
|---|---|---|---|---|---|---|---|---|
| Decontamination | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |
| Medical Gases | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |
| Ventilation | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |
| Water | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Fire | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Electrical (LV) | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Electrical (HV) | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |
| Lifts/LOLLER | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |
| Pressure Systems | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |
| Asbestos | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Confined Spaces | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |
| Environmental/Energy /Carbon Reduction | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |

**Figure 2: Suggested number of lead or deputy post-holders in a variety of healthcare facilities.**

- Large / medium primary care non-residential site.
- Specialist hospital.
- Large / complex mental health or learning disability hospital.
- Medium / small mental health or rehabilitation hospital.
- Multi-site non-residential small sites (community premises).

> **The number of Authorised Person roles that an individual can reasonably be expected to hold successfully is directly dependent on the technical subject matter and the size/complexity of the site involved**

### AEs – subject matter experts or Jacks of All Trades?

HTM 00 – *Policies and Principles of Healthcare Engineering* (2014) outlines the role of an AE, and indicates the levels of specialist knowledge, skills, and experience required to be achieved and maintained to hold this role. Clause 3.16 says: 'The AE will act as an independent professional adviser to the healthcare organisation. The AE should be appointed by the organisation with a brief to provide services in accordance with the relevant HTM. The professional status and role required may vary in accordance with the specialist service being supported.'

Clause 3.17, meanwhile, states: 'The AE will act as assessor and make recommendations for the appointment of Authorised Persons (APs), monitor the performance of the service, and provide an annual audit to the DP. To effectively carry out this role, particularly with regard to audit, the AE should remain independent of the operational structure of the healthcare organisation.'

Given the depth and range of knowledge and Continued Professional Development required to become an AE, and to maintain the essential technical ability to fulfil the role as an AE and subject matter expert, my view is that it's highly unlikely that an individual can practically maintain the role for more than 2-3 subject areas.

### The Authorised Person (AP)

HTM 00 – *Policies and Principles of Healthcare Engineering* outlines the role of an Authorised Person, and indicates the levels of specialist knowledge, skills, and experience required to be achieved and maintained to hold this role. Clause 3.18 says: 'The AP has the key operational responsibility for the specialist service. This person will be qualified and sufficiently experienced and skilled to fully operate the specialist service. They will be nominated by the AE, appointed by the healthcare organisation, and be able to demonstrate:

- Their understanding through familiarisation with the system and attendance at an appropriate professional course.
- Competency.
- A level of experience, and
- Evidence of knowledge and skills.'

Clause 3.19 states: 'An important element of this role is the maintenance of records, quality of service, and maintenance of system safety (integrity)', Clause 3.20: 'The AP will also be responsible for establishing and maintaining the validation of Competent Persons (CPs), who may be employees of the organisation or appointed contractors', and Clause 3.21: 'Larger sites may need more than one AP for a particular service. Administrative duties such as record keeping should be assigned to Specific APs and recorded in the operational policies.

> **Increasingly issues are arising due to staff and skills shortages that are seeing an evolving situation where the level of responsibility held by a small number of single technical professionals exceeds the practical limits of both their skills / knowledge levels and time availability**

> **It is not unusual to find that operational estates officers and engineers are expected to maintain a full range of duties, management roles, and associated tasks, and, in addition, to fulfil multiple AP roles**

'To manage essential information, processes, and operational management contained in the specific guidance/HTM. To act as an on-site point of contact and knowledge for the HTM-related issues, enabling organisations to manage these systems safely and economically.'

### Essential responsibilities

The essential responsibilities within an AP's remit include:

- Applying the main applications for the specific HTM guidance, and explaining why the need exists.
- Applying management responsibilities in relation to the specific HTM guidance in accord with the defined Authorised Person role in Department of Health guidance.
- Describing health and safety issues relating to the specific HTM guidance, including the legal requirements relating to these issues and means of compliance.
- Describing how the specific HTM/ guidance can be used to minimise health-associated risks.
- Managing the essential monitoring and maintenance procedures required for the safe and efficient operation of plant.
- Using sources of guidance associated with the safe and efficient operation of plant components.
- Applying the main requirements of the specific HTM guidance and understanding their relevance to the health of patients, visitors, and staff in accordance with HTM and HBN guidance.
- Managing and controlling the work of the specific (HTM-defined) technical specialist in accordance with the Authorised Person role, as defined in Department of Health guidance.

As I have already explained, the number of AP roles that an individual can reasonably be expected to hold successfully is directly dependent on the technical subject matter and the size/complexity of the site involved. Figure 2 outlines a suggested minimum recommended number of individual post-holders (either leads or deputies) likely to be able to be practically maintained.

In addition to the stated role and responsibilities of an appointed Authorised Person, it also needs to be acknowledged that these roles are not seen as a standalone role, but as an addition to those functions and tasks that need to be carried out as part of an existing primary job role or 'day job'. It is not unusual to find that operational estates officers and engineers are expected to maintain a full range of operational duties, management roles, and associated tasks, and, in addition, to fulfil multiple AP roles. This is not a sustainable position, and with an ageing and reducing workforce capacity and skills base, cannot be reasonably expected to be sustained.

Given the aforementioned number of post-holders required, it is likely that individuals will be required/expected to hold multiple AP roles. However, the number of roles will be directly influenced both by the complexity of the role/site and the levels of knowledge/CPD needed to maintain appropriate competency. In this context, the following indicative limits are, in my view, a sensible maximum to consider as appropriate:

- For large acute or teaching hospitals I would suggest that a suitable number of disciplines or roles for an AP should be between one and a maximum of three, with only one of these being a lead AP role.
- For medium multi-service or district general hospitals, I would recommend that an AP should be responsible for between one and a maximum of four disciplines, of which up to two could be a lead AP role.
- In small multi-service or inpatient Community Hospitals, between one and a maximum of five disciplines should fall within the remit of an AP, of which up to three might entail a lead AP role.
- In a non-residential large / medium primary care site I recommend a suitable number of disciplines or roles for the AP being between one and a maximum of five, with up to three being a lead AP role.
- In a specialist hospital, the AP might realistically have responsibility for between one and a maximum of five disciplines / areas, with up to three being a lead AP role.
- In a large / complex mental health or learning disability hospital, it is recommended that a suitable number of disciplines or roles as an AP should range from one to a maximum of four, of which up to two could be a lead AP role.
- In the case of a medium-sized / small mental health or rehabilitation hospital, a suitable number of disciplines or roles as an AP should be between one and a maximum of five, up to three of these being a lead AP role.
- In multi-site non-residential small sites (community premises) I would suggest that a suitable number of disciplines or roles for an AP should be between one and a maximum of five, of which up to four could be a lead AP role. However, the scope of any AP appointments will be limited by the level of detailed site knowledge that any single person can reasonably retain.

If the approach I have set out is accepted as a reasonable method to ensure compliance, while maintaining adequate resources, the result is likely to support a significant increase in the professional staffing levels required to operate a healthcare facility. How that can be achieved is another, and far more complex and far-reaching conundrum, which will require careful consideration and debate. hej


## Andrew Poplett

**Andrew Poplett IEng, MIHEEM, ACIBSE, AffIFE, AE (W&V), has over 30 years' experience of healthcare estates management, with specific and specialist knowledge of fire safety, water, and critical ventilation systems. On leaving the NHS in 2010, he established an independent healthcare estates consultancy (Andrew Poplett Enterprises Ltd), which provides AE services for both water and specialist ventilation systems, along with general healthcare estates-related advice and support. He has a national client base, and currently provides advice, support, awareness training, and independent auditing services, to over 40 NHS Trusts and private healthcare providers in his role as an Authorising Engineer.**