Original Research Paper

A Comparative Analysis of the UK Physician Associate Curriculum Against the Prescriber Curricula for Pharmacists and Doctors

Neil Howie[1]

[1]MSc, SFHEA, PA-R, Principal Research Fellow, Physician Associates for Healthcare Improvement, Wolverhampton, United Kingdom

Abstract

Background: As the Physician Associate (PA) profession in the UK moves towards statutory regulation with the General Medical Council (GMC), consideration is being given to which, if any, mechanism of prescribing should be granted to PAs. This study examines the alignment between the PA educational curriculum and two pathways to prescribing authority: independent prescribing (IP) from qualification and the non-medical prescribing course. The aim is to determine whether PA education equips graduates for independent prescribing, potentially reducing the need for post-qualification training. **Methods:** A comparative curriculum analysis was conducted by mapping the pre-2023 PA curriculum against the General Pharmaceutical Council (GPhC) standards for pharmacist independent prescribers and the GMC outcomes for newly qualified doctors. The curriculum mapping was performed using an Excel-based comparison tool, identifying areas of direct and oblique alignment between the PA curriculum and the master curricula. **Results:** The analysis revealed comprehensive alignment between the PA curriculum and the competencies required for independent prescribing by pharmacists and newly qualified doctors. Key areas of alignment include patient-centred care, professional knowledge and skills, and professionalism. However, gaps were identified in the PA curriculum regarding the use of technology in prescribing and the clinical governance of prescribing. **Discussion:** The findings suggest that the PA curriculum provides a strong foundation for many aspects of prescribing education, supporting the idea that PAs should be granted the use of a mechanism of prescribing. Addressing identified gaps, particularly in technology use and clinical governance, could further enhance PA preparedness for prescribing roles. This could reduce the extent of any post-qualification training. Future research should explore variations in clinical experience and individual readiness for independent prescribing among PAs. Collaborative efforts and ongoing curriculum refinement are essential to integrate PAs into prescribing roles while ensuring patient safety in the UK healthcare system.

Key words: Physician associate, Physician assistant, Prescribing education, Independent prescribing, Curriculum mapping, Health sciences education

Date submitted: 19-May-2024

Email: Neil Howie (neilhowie@pafhi.org)

Citation: Howie N. A Comparative Analysis of the UK Physician Associate Curriculum Against the Prescriber Curricula for Pharmacists and Doctors. Educ Health 2024;37:357-366

Online access: www.educationforhealthjournal.org

DOI: 10.62694/efh.2024.91

Published by The Network: Towards Unity for Health

Background

As the Physician Associate (PA) profession prepares for statutory regulation under the General Medical Council (GMC), there is increasing recognition of the need for PAs to have prescribing authority. [1] Currently, PAs are unable to prescribe prescription-only medications (POMs), which limits their ability to independently manage patient care. With over 4,000 qualified PAs in the UK, the lack of prescribing authority is seen as a barrier to the profession's full integration into clinical practice. Independent prescribing (IP) has been identified as the most appropriate mechanism to overcome this limitation and enable PAs to work to the fullest capacity of their training.

Independent prescribing (IP) refers to the ability of healthcare professionals to prescribe medicines,

including POMs, without needing direct supervision from another clinician. The prescriber takes full responsibility for assessing the patient, making a diagnosis, deciding on the necessary treatment, and prescribing the appropriate medication. This role is typically associated with a high level of professional autonomy and clinical responsibility. In the UK, there are two main routes to becoming an independent prescriber:

1. Prescribing Authority from Registration: Doctors and dentists are granted prescribing authority immediately upon registration, based on their comprehensive medical or dental training.
2. Post-Registration Independent Prescriber Training: Other healthcare professionals, such as pharmacists, must complete additional clinical training after registration, following a period of clinical practice, to qualify as independent prescribers. This route was first introduced in the UK for registered nurses in 1992.[2]

In contrast to independent prescribing, Patient Group Directions (PGDs) offer a more limited form of prescribing autonomy. Under PGDs, clinicians can only supply or administer POMs to patients who fit specific criteria outlined in a written direction. The criteria are pre-determined, and the clinician must be signed off as competent to administer each specific POM. This restricts flexibility in clinical decision-making, as the clinician is bound by the PGD's instructions rather than making a case-by-case assessment of the patient's needs.

The introduction of statutory regulation for PAs presents an opportunity to reconsider their role within healthcare systems, particularly in prescribing. The debate now focuses on whether PAs should be granted prescribing authority from qualification or follow the post-registration route used by other healthcare professionals.

This study builds upon previous research, which identified independent prescribing as the most suitable mechanism for PAs. [3] It aims to map the pre-2023 UK PA curriculum against the prescribing curricula for doctors and pharmacists, assessing whether PAs are already equipped for prescribing roles and determining whether additional post-qualification training is necessary. The findings will contribute to ongoing discussions about PA prescribing authority and guide future policy on prescribing pathways for PAs in the UK.

Table 1: professions that can undertake post-registration independent prescribing qualifications and time of registration required to commence a course

Profession	Number of years registration required	Prescribe some controlled drugs
Optometrist	To have been registered with the General Optical Council for two full years and practicing in the UK during that time. [19]	No
Paramedic	Have normally at least 3 years relevant post-qualification experience in the clinical setting in which the individual will practice. [20]	No
Pharmacist	Must have 2 years of "patient-oriented" experience as a registered pharmacist.[21]	Yes
Podiatrist	Have normally at least 3 years relevant post-qualification experience in the clinical setting in which the individual will practice. [22]	Yes
Physiotherapist	Have normally at least 3 years relevant post-qualification experience in the clinical setting in which the individual will practice. [23]	Yes
Radiographer (Therapeutic)	Have normally at least 3 years relevant post-qualification experience in the clinical setting in which the individual will practice.[23]	No
Registered Midwife	1 year and must prove meet set proficiencies - decision made by course provider. (formally 3 years). [24]	No
Registered Nurse	1 year and must prove meet set proficiencies - decision made by course provider. (formally 3 years).[24]	Yes

Aims and Objectives
This curriculum mapping seeks to determine whether PA education currently equips graduates to undertake either of the existing methods of independent prescribing. If it does, this could significantly reduce or eliminate the need for additional prescribing training post-qualification, potentially recognising prior learning to expedite the process. Moreover, the findings could guide future development of the model of prescribing mechanisms that PAs could utilise.

The objective is to map the pre-2023 national PA curriculum against the prescribing curricula of doctors and pharmacist independent prescribers (PIPs).

Previous Literature
Some literature exists on the teaching of pharmacology to PA students. It has been reported that the nature of pharmacology teaching on UK PA courses varied. [4] Two other pieces of work have explored, to some degree, the views of PAs on different mechanisms of prescribing. [5,6] Another study has compared the scope of practice of PAs to that of three healthcare roles and indicates IP as the most appropriate mechanism for providing POM. [3] However, none directly maps the PA national curriculum to that of either a post-registration IP course, or the prescribing competences set out by the GMC for doctors.

Comparing Curricula
Curriculum mapping refers to the comparison of two or more curricula, producing an illustration, often in the form of a grid. The resulting illustration can then be reviewed to identify areas of commonality and difference between the curricula in question and highlight gaps between them. The data being compared is in the form of the documents that comprise the curricula. These can be written by different organisations, using different terminology, structures, and formats, which can make direct comparison difficult. The curriculum map seeks to overcome these institute-level disparities to provide a meaningful comparison. The approach to mapping that has been used here follows the principles for curriculum mapping set out by Greatorex *et al.* [7]

To select the appropriate curricula for comparison it was first necessary to define the level of the curricula to ensure that these are all at the same level of influence in the respective professions. This was done in line with the concept of *macro, meso,* and *micro* level curriculum, as defined in general approaches to education. [8] In this context, the individual modules and classes that comprise the course are the *micro*-level curriculum. The overall programme specification or syllabus is the *meso*-level, and the *macro*-level are those national-level documents which define the requirements of the *meso*-level.

Curricula for Comparison
For this comparison, the PA national curriculum is *The Competence and Curriculum Framework for the Physician Assistant (CCF)*. [9] The CCF is one of two macro-level documents that govern the education of PAs. The other is the *Matrix of Core Clinical Conditions*, [10] which specifies clinical conditions that PAs are expected to assess, and the level of competence expected to assess and manage these conditions. In contrast, the CCF sets out general competencies, educational outcomes, and core syllabus for PA education. This is set out across the document in different sections:

- Section 2 – The Competence Framework:
  - 2.3 - Specification of core competencies,
  - 2.4 - Specification of core procedural skills,
  - 2.6.3 – List of patient presentations,
- Section 3 – The Curriculum Framework:
  - 3.4 – The educational aims of PA programmes,
- Section 5 – The Core Syllabus:
  - 5.1 Core theoretical knowledge.

These five subsections represent the curriculum for PA education that will be compared separately against each of the two master curricula.

Methods
The curriculum mapping in this study followed the structured approach outlined by *Gretorex et al.*, [7] which provides a systematic method for comparing curricula by identifying areas of direct and oblique alignment. This stepwise process ensured that the Physician Associate (PA) curriculum was rigorously compared to the independent prescribing curricula of pharmacists and doctors.

Step 1: Selection of Master Curricula
The master curriculum for non-medical prescribing is the General Pharmaceutical Council's (GPhC) *Standards for the Education and Training of Pharmacist Independent Prescribers.* [11] This was selected as it specifies a curriculum for all PIP courses that includes competencies, as well as the overall standards of the course being undertaken. This aligns well with the equivalent physician associate curriculum document, as both can be

defined as *macro*-level curricula. Equivalent documents for other NMP professions do not necessarily combine these features. For example, the Nursing and Midwifery Council (NMC) *Standards for Prescribing Programmes*[12] sets overall standards for programmes (e.g. the entry criteria to programmes, practice learning and assessment) but for specific prescribing competencies, refers to another document, the Royal Pharmaceutical Society's (RPS) *A Competency Framework for All Prescribers.* [13]
For the curriculum for independent prescribing from qualification, the GMC's *Outcomes for* Graduates [14] was selected. The outcomes are those listed in section 18: *Prescribing Medications Safely*, and these set the standards expected for new doctors. This aligned well to the CCF, which sets the standards for newly qualified PAs. *Outcomes for Graduates* is also a *macro*-level curriculum.

Step 2: Defining Curriculum Levels for Comparison
The comparison was conducted at the macro level, focusing on national-level standards that define competencies across the professions:
- Macro Level: National-level curriculum documents such as the CCF for PAs, the GPhC standards, and the GMC outcomes for medical graduates.
- Micro Level: Individual modules or class-specific curricula were excluded to ensure consistency in comparing broad, national educational standards.

Step 3: Development of a Comparison Tool
An Excel-based tool was created for curriculum mapping:
- Key outcomes or competencies from the GPhC and GMC curricula were listed on one axis, with corresponding sections of the PA CCF on the other.
- Three categories of alignment were established:
  - Direct alignment (green): Full correspondence between PA curriculum outcomes and the independent prescribing standards.
  - Oblique alignment (yellow): Similar but not identical outcomes or competencies.
  - No alignment (red): No correspondence between the two curricula.

Step 4: Curriculum Mapping Process
The author conducted the curriculum mapping independently. Each section of the CCF was reviewed and compared to the relevant sections of the GPhC and GMC curricula. Focus was placed on competencies such as clinical decision-making, pharmacology knowledge, and legal/ethical responsibilities related to prescribing.
For example, the GPhC standards for safe prescribing were directly compared with PA competencies in pharmacology and patient care, identifying where the PA curriculum aligned or diverged from the prescribing curricula of other professions.

Step 5: Validation
The curriculum mapping was performed by a single researcher, following the guidelines provided by *Gretorex et al*. [7] No formal consensus-building or statistical measures (e.g., kappa statistics) were used, but the structured approach ensured that judgments of alignment were rigorously applied.

Results
The curriculum mapping analysis revealed a comprehensive alignment between the Competence and Curriculum Framework (CCF) for Physician Associates and the master curricula outlined by the GPhC and the GMC. Specifically, the CCF mapped entirely to the GPhC standards for pharmacist independent prescribers, encompassing all learning outcomes across the five sections of the CCF. This alignment indicates a strong correlation between the educational objectives of the Physician Associate curriculum and the competencies required for independent prescribing by pharmacists.

Furthermore, the CCF demonstrated a robust alignment with the GMC outcomes for newly qualified doctors, particularly in the domain of prescribing medications safely. All competencies specified by the GMC were found to correspond to elements within the CCF, highlighting the consistency between the educational requirements for Physician Associates and those for medical practitioners.

In addition to the direct alignment observed between the curricula, several areas of oblique alignment were identified during the mapping process. These instances signify overlapping themes or concepts between the curricula, albeit with nuanced differences in terminology or emphasis. For instance, both the GPhC and GMC curricula emphasised the importance of utilising technology in prescribing practices, a concept implicitly echoed in the CCF's focus on adapting to different healthcare settings and technological advancements.

Table 2: (Direct alignment – green; Oblique alignment – yellow; No alignment - red)

GPhC Curriculum		FPA Curriculum	
Learning Outcomes		Level of alignment	Element of the PA curriculum
	Person-centred care		
1	Recognise the psychological and physical impact of prescribing decisions on people		2.3.2, 2.3.4, 5.1
2	Understand and meet their legal responsibilities under equality and human rights legislation and respect diversity and cultural differences		2.3.15, 2.3.16
3	Take responsibility for ensuring that person-centred care is not compromised because of personal values and beliefs		2.3.2, 2.3.3, 2.3.4
4	Demonstrate appropriate history-taking techniques through effective consultation skills		2.3.4
5	Demonstrate an understanding of the role of the prescriber in working in partnership with people who may not be able to make fully informed decisions about their health needs		2.3.8
6	Support individuals to make informed choices that respect people's preferences		2.3.2, 2.3.3, 2.3.8, 2.3.15, 2.3.16
	Professionalism		
7	Demonstrate a critical understanding of their own role and the role of others in multi-professional teams		2.3.1, 2.3.12
8	Recognise their own role as a responsible and accountable prescriber who understands legal and ethical implications		2.3.1, 2.3.8
9	Apply relevant legislation and ethical frameworks related to prescribing, including remote prescribing and the handling and sharing of confidential information		2.3.8, 2.3.15
10	Recognise and manage factors that may influence prescribing decisions		2.3.6, 2.3.7, 2.3.8, 2.3.9, 2.3.11, 2.3.14, 2.3.16
11	Apply local, regional, and national guidelines, policies and legislation related to healthcare		2.3.8, 2.3.15, 2.3.17
12	Reflect on and develop their own prescribing practice to ensure it represents current best practice		2.3.8, 2.3.14
13	Apply an understanding of health economics when making prescribing decisions		2.3.13
14	Understand the clinical governance of the prescriber, who may also be in a position to supply medicines to people		2.3.8, 2.3.11
15	Recognise other professionals' practice and raise concerns related to inappropriate or unsafe prescribing by other prescribers		2.3.11, 2.3.15, 2.3.16, 3.4
	Professional knowledge and skills		
16	Apply evidence-based decision-making in all aspects of prescribing		2.3.6, 2.3.7, 2.3.8, 2.3.9
17	Manage the risks and benefits associated with prescribing decisions		2.3.8, 2.3.9
18	Demonstrate the application of pharmacology in relation to their own prescribing practice		2.3.6, 2.3.7, 2.3.8, 5.1
19	Demonstrate clinical and diagnostic skills in clinical settings appropriate to their scope of practice		2.3.1, 2.3.4, 2.3.5, 2.3.6, 2.3.7, 2.3.8, 2.3.9, 2.3.14, 3.4
20	Create and maintain appropriate records which ensure safe and effective care and align with relevant legislation		2.3.8, 2.3.10
21	Identify relevant investigations and interpret results and data in their prescribing practice		2.3.6, 2.3.7
22	Utilise current and emerging systems and technologies in safe prescribing		2.3.8, 3.4
23	Identify and respond to people's need when prescribing remotely		2.3.2, 2.3.7, 2.3.8
24	Apply the principles of effective monitoring and management to improve patient outcomes		2.3.8, 2.3.9
25	Recognise and manage prescribing and medication errors		2.3.11, 2.3.14, 2.3.15
26	Recognise the public health issues in promoting health as part of their prescribing practice		2.3.8, 2.3.9, 2.3.18
	Collaboration		
27	Work collaboratively with others to optimise individuals' care, understanding their roles in the prescribing process		2.3.8, 2.3.9, 2.3.12
28	Recognise their own role and responsibilities, and those of others, in safeguarding children and vulnerable adults		2.3.3, 2.3.11, 2.3.12, 2.3.15, 3.4
29	Recognise when and where to refer people appropriately		2.3.6, 2.3.7, 2.3.9, 3.4
30	Collaborate with people to encourage them to take responsibility for managing care		2.3.2, 2.3.15
31	Demonstrate appropriate consultation skills to get information from individuals who are either unaware of or guarded about their health needs, to inform safe prescribing		2.3.2, 2.3.4, 2.3.6, 2.3.8
32	Recognise when to seek guidance from another member of the healthcare team or an appropriate authority		2.3.1, 2.3.7, 2.3.8

Table 3: (Direct alignment – green; Oblique alignment – yellow; No alignment - red)

GMC Curriculum		FPA Curriculum	
Outcomes for newly qualified doctors: Prescribing medications safely (section 18)		Level of alignment	Element of the PA curriculum
a	establish an accurate medication history, covering both prescribed medication and other drugs or supplements, and establish medication allergies and the types of medication interactions that patients experience		2.3.4
b	carry out an assessment of benefit and risk for the patient of starting a new medication taking into account the medication history and potential medication interactions in collaboration with the patient and, if appropriate, their relatives, carers or other advocates		2.3.2, 2.3.4, 2.3.8, 2.3.12
c	provide patients, their relatives, carers or other advocates, with appropriate information about their medications in a way that enables patients to make decisions about the medications they take		2.3.2, 2.3.9, 2.3.15, 2.3.16
d	agree a medication plan with the patient that they are willing and able to follow		2.3.2, 2.3.8, 2.3.9
e	access reliable information about medications and be able to use the different technologies used to support prescribing		2.3.8, 2.3.14, 2.3.17, 3.4
f	calculate safe and appropriate medication doses and record the outcome accurately		2.3.8, 2.4.9
g	write a safe and legal prescription, tailored to the specific needs of individual patients, using either paper or electronic systems and using decision support tools where necessary		2.3.8
h	describe the role of clinical pharmacologists and pharmacists in making decisions about medications and prescribe in consultation with these and other colleagues as appropriate		2.3.8, 2.3.12, 3.4
i	communicate appropriate information to patients about what their medication is for, when and for how long to take it, what benefits to expect, any important adverse effects that may occur and what follow-up will be required		2.3.2, 2.3.8
j	detect and report adverse medication reactions and therapeutic interactions and react appropriately by stopping or changing medication		2.3.8
k	monitor the efficacy and effects of medication and with appropriate advice from colleagues, reacting appropriately by adjusting medication, including stopping medication with due support, care and attention if it proves ineffective, is no longer needed or the patient wishes to stop taking it		2.3.8, 2.3.9
l	recognise the challenges of safe prescribing for patients with long term physical and mental conditions or multiple morbidities and medications, in pregnancy, at extremes of age and at the end of life		2.3.3, 2.3.4,
m	respect patient choices about the use of complementary therapies, and have a working knowledge of the existence and range of these therapies, why patients use them, and how this might affect the safety of other types of treatment that patients receive		2.3.16
n	recognise the challenges of delivering these standards of care when prescribing and providing treatment and advice remotely, for example via online services		2.3.2, 2.3.6, 2.3.11, 3.4
o	recognise the risks of over-prescribing and excessive use of medications and apply these principles to prescribing practice.		2.3.7, 2.3.8, 2.3.9, 2.3.11

Overall, the results of the curriculum mapping analysis indicate a strong foundation within the Physician Associate curriculum that aligns closely with the educational standards set forth by regulatory bodies for prescribing professions. This alignment suggests that Physician Associate education adequately prepares graduates for the responsibilities associated with independent prescribing, and so lays a solid groundwork for the potential future integration of prescribing authority within the profession.

Discussion

This study identified several areas of alignment and divergence between the PA curriculum and

independent prescribing (IP) curricula. Notably, there was comprehensive alignment with the GPhC standards for pharmacist independent prescribers and the GMC outcomes for newly qualified doctors, indicating a strong foundation within the Physician Associate curriculum. However, areas of oblique alignment underscore the need for refinement to ensure comprehensive coverage of prescribing competencies.

Areas of Oblique Alignment

The mapping process found three areas of oblique alignment between the CCF and each of the two master curricula. In each case, the outcome used very specific language that did not have a direct equivalent in the CCF.

The areas of oblique alignment are generally specific to one of the curricula or another. However, there is one common area in both the GMC (GMC – n) and GPhC (GPhC – 22 & 23) curricula: the use of technology in prescribing. Both specifically acknowledge that technology will impact prescribing, either through electronic prescribing systems or through the limitations that remote consultation places on responding to patient needs. Although the PA curriculum does not have a direct equivalent, it does refer to preparing prescriptions in different settings, including primary care (2.3.8), and to becoming adept at the use of information technology (3.4). This suggests a potential link between the two learning outcomes (LOs), but such a link should not be assumed. The latter PA LO suggests that a PA should adapt to new technology regardless of its purpose. This corresponds to the gap between the declared and taught curriculum, as set out by Harden [15], where in this case, the PA curriculum does not explicitly state that electronic prescribing systems should be taught but might be discussed with students depending on the PA course.

Similarly, the GMC curriculum specifies a learning outcome for respecting patient use of complementary therapies. There is no equivalent LO for PAs under prescribing, but there is a LO (2.3.2) in which PAs must respect and foster patient choice in planning and deciding on their own treatment decisions.

GPhC outcome 14 refers to the clinical governance of the prescriber, noting that they may also be able to supply medicines. There is no equivalent in the GMC outcomes, nor in the RPS competencies on prescribing. Instead, the CCF had a broad equivalent that aligns with the general principle of the corresponding outcome, but there is potential for a curriculum gap to form due to interpretation of that outcome.

These areas of oblique alignment identified in this study underscore the importance of refining the PA curriculum to address specific language discrepancies and ensure comprehensive coverage of prescribing competencies. While the PA curriculum aligns with overarching principles of professionalism, person-centred care, and evidence-based practice, addressing the nuances highlighted by the GMC and GPhC curricula can enhance the preparedness of PAs for prescribing roles. Furthermore, future research should explore variations in clinical experience and individual readiness for independent prescribing to provide a more nuanced understanding of educational preparedness among PAs.

Recommendations for Curriculum Improvement

The findings from this curriculum comparison suggest several opportunities for enhancing the PA curriculum to better align with the competencies required for independent prescribing. While there is notable overlap between the existing PA curriculum and the prescribing curricula for doctors and pharmacists, some gaps in training were identified that could be addressed to ensure PAs are fully prepared for prescribing roles.

1. Enhancing Pharmacology Training: There is a need for more comprehensive pharmacology training within the PA curriculum. Expanding this content to include more in-depth knowledge of pharmacokinetics, pharmacodynamics, and drug interactions would better prepare PAs for the responsibilities of independent prescribing. [16]
2. Strengthening Clinical Decision-Making Skills: The PA curriculum could benefit from a greater emphasis on clinical decision-making, particularly in relation to prescribing. Case-based learning and simulation exercises that focus on making safe and effective prescribing decisions would align the PA curriculum more closely with the competencies outlined in the independent prescribing curricula. [4]

3. Incorporating Legal and Ethical Responsibilities of Prescribing: While the PA curriculum includes training on ethical decision-making, a more explicit focus on the legal responsibilities involved in prescribing would help bridge the gap between current PA training and the expectations of independent prescribers. This could

be achieved by adding specific modules on the legalities of prescribing, consent, and handling prescription errors. [4]

These targeted enhancements to the PA curriculum would not only better equip PAs for prescribing roles but also reduce the need for extensive post-qualification training. Implementing these changes would facilitate a smoother transition for PAs to be granted prescribing authority, whether upon qualification or through a tailored post-registration training programme.

Implications for Future PA Prescribing

The near-universal alignment of the PA curriculum to IP curricula supports earlier work on the potential use of IP by PAs. [3,16] It also reinforces the idea that IP is the appropriate mechanism for the provision of POMs by PAs. [3] Should prescribing authority be granted in the form of a post-registration IP course, existing PAs could apply for recognition of prior learning (RPL) for the equivalent outcomes of their PA course to an IP course. However, disparities may exist in how much RPL can be applied across different PA courses in the UK. Gaps will come, as highlighted in previous studies [4,17] particularly in pharmacology knowledge and other areas of oblique alignment identified by this research. Providers of IP courses must consider how to design flexibility into their curricula to accommodate these differences. A PA course provider could, for example, offer an IP course tailored specifically for graduates of their PA course.

Strengths and Limitations

A strength of this study is that all three of the curricula set out the expectations of a newly qualified practitioner in the respective professions, allowing a like for like comparison. This study is limited by being focused on *macro*-level curricula and not mapping *micro*-level curricula. It is not practical to map the curricula of all 35 current PA courses, and such a project would be limited to current course curricula and not consider older versions of a curriculum that have ceased to be used. Harden20, set out that curriculum gaps can exist between the 'declared curriculum' (the macro-level curriculum) and the taught curriculum (i.e. that at *meso*- and *micro*-level) that forms the basis of a course. Further research is required to map PA course curricula to the master curricula used in this study. A representative sample of 6-8 PA courses may be selected to give a national picture at the *micro*-level.

Conclusions

In conclusion, the comparative analysis between the PA curriculum and IP curricula primarily reveals areas of alignment. Although oblique alignments highlight language discrepancies that necessitate interpretation, the overall picture suggests that IP, in some form, would be an appropriate mechanism for providing POMs by PAs. Recognizing prior learning and refining the PA curriculum provide promising pathways for preparing PAs to undertake IP, should such a mechanism be provided. Moving forward, collaborative efforts and ongoing refinement of educational curricula are essential to ensure the effective integration of PAs into prescribing roles while upholding standards of patient care and safety in the UK healthcare system.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Acknowledgements

I would like to thank colleagues at PAs for Healthcare Improvement for their contributions to the success of this research.

References

1. Howie N, Saunders J, Straughton K, Pooler A, Cadman-Davies L. The Proposed Journey to Prescribing for Physician Associates: Information for Educators [Internet]. Keele, U.K.: PA Educators Conference, Keele University, March 2021; 2021 [cited 2021 Apr 22]. Available from: https://www.researchgate.net/publication/350452034_The_Proposed_Journey_to_Prescribing_for_Physician_Associates_Information_for_Educators

2. Department of Health and Social Security. Medicinal Products: Prescription by Nurses etc. Act 1992. 1992.

3. Howie N, Howie F, Seville P. Comparison of the scope of practice of physician associates with that of healthcare professions with prescribing responsibility from point of registration. *Future Healthcare Journal*. 2023;10(1):38–45. https://doi.org/10.7861/fhj.2022-0064.

4. Guest BN, Chandrakanthan C, Bascombe K, Watkins J. Pharmacology for physician associate programmes: a collaborative, flexible and responsive approach to curriculum design. *Future Healthcare Journal*. 2021;8(3)–584. https://doi.org/10.7861/fhj.2021-0085.

5. Guest BN, Chandrakanthan AC, Bascombe K, Watkins J. Physician associate prescribing: perspectives, practices and pathways. *Future Healthcare Journal*. 2022;9:1–8. https://doi.org/10.7861/fhj.2022-0002.

6. Williams L, Adhiyaman V. What do physician associates think about independent prescribing? *Future Healthcare Journal*. 2022;9(3)
.2022-0026. https://doi.org/10.7861/fhj.2022-0026.

7. Greatorex J, Rushton N, Coleman T, Darlington E, Elliott G. Towards a method for comparing curricula. 2019;(July). Available from: http://www.cambridgeassessment.org.uk

8. Boeren E. Understanding Sustainable Development Goal (SDG) 4 on "quality education" from micro, meso and macro perspectives. *International Review of Education*. 2019;65(2):277–294. https://doi.org/10.1007/s11159-019-09772-8.

9. Faculty of Physician Associates. Competence and Curriculum Framework for the Physician Assistant. *Physician Assistant Managed Voluntary Register*. 2012.

10. Department of Health. Matrix specification of Core Clinical Conditions for the Physician Assistant. 2006.

11. General Pharmaceutical Council. Standards for the education and training of pharmacist independent prescribers. *General Pharmaceutical Council*. 2019;(January). Available from: https://www.pharmacyregulation.org/education.

12. Nursing and Midwifery Council. Part 3: Standards for prescribing programmes. 2018;(May):1–15. Available from: https://www.nmc.org.uk/globalassets/sitedocuments/standards-of-education-and-training/standards-for-prescribing-programmes.pdf.

13. National Prescribing Centre. A single competency framework for all prescribers. *NICE*. 2012;(May):4,11-13. Available from: https://www.nice.org.uk.

14. General Medical Council. Outcomes for graduates. *General Medical Council Publications*. 2018;1(1):8.

15. Harden RM. AMEE Guide No. 21: Curriculum mapping: A tool for transparent and authentic teaching and learning. *Medical Teacher*. 2001;23(2):123–137. https://doi.org/10.1080/01421590120036547.

16. Guest BN, Chandrakanthan C, Bascombe K, Watkins J. Preparing physician associates to prescribe: evidence, educational frameworks and pathways. *Future Healthcare Journal*. 2022;9(1):21–24. https://doi.org/10.7861/fhj.2022-0003.

17. The Nursing and Midwifery Council. Changes to the requirements for entry to independent prescribing courses | General Pharmaceutical Council [Internet]. 2019 [cited 2022 Jul 4]. Available from: https://www.nmc.org.uk/education/becoming-a-nurse-midwife-nursing-associate/becoming-a-prescriber/

18. Harden RM. AMEE Guide No. 21: Curriculum mapping: A tool for transparent and authentic teaching and learning. *Medical Teacher*. 2001;23(2):123–137. https://doi.org/10.1080/01421590120036547.

19. Tan ACW, Emmerton LM, Hattingh HL. Prescribing and medication-initiation roles based on the perspectives of rural healthcare providers in a study community in Queensland. *Australian Health Review*. 2013;37(2):172–177. https://doi.org/10.1071/AH12144.

20. College of Paramedics, NHS England. Improving Patients' Access to Medicines: A Guide to Implementing Paramedic Prescribing within the NHS in the UK. *Reference COP-IP003*.

21. General Pharmaceutical Council. GPhC accreditation criteria, learning outcomes and indicative content for pharmacist independent prescribing programmes. *General Pharmaceutical Council*. 2018. Available from: https://www.pharmacyregulation.org/education.

22. Royal College of Podiatrists. Medicines: prescribing, sale, supply and administration of medicines by podiatrists [Internet]. [cited 2022 Jul 5]. Available from: https://rcpod.org.uk/the-college/medicines.

23. Health and Care Professions Council. Standards for prescribing [Internet]. 2019 [cited 2022 Jul 5]. Available from: https://www.hcpc-uk.org/standards/standards-relevant-to-education-and-training/standards-for-prescribing/.

24. The Nursing and Midwifery Council. Changes to the requirements for entry to independent prescribing courses | General Pharmaceutical Council [Internet]. 2019 [cited 2022 Jul 4]. Available from: https://www.nmc.org.uk/education/becoming-a-nurse-midwife-nursing-associate/becoming-a-prescriber/