An impact assessment of the Podiatry Competency Framework for Integrated Diabetic Foot Care, 2012–2019

David Wylie and Violet Butters

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Article points

1. Competency frameworks require to have utility.
2. Competency frameworks can measure progression in learning and development over time within NHS Podiatry services to demonstrate return on investment in learning and education.
3. Competency frameworks can be utilised to differentiate between NHS clinical bandings in order to identify development needs.

Key words

- Competency framework
- Podiatry
- Learning and education

Authors

David A Wylie is Head of Podiatry, NHS Greater Glasgow & Clyde, Scotland; Violet Butters is Advanced Podiatrist (Foot Protection), NHS Greater Glasgow & Clyde, Scotland

The *Podiatry Competency Framework for Integrated Diabetic Foot Care* was launched in 2012 to describe the knowledge and skills required to deliver diabetic foot care at all levels within the healthcare system. It was superseded in June 2019 by the *Capability Framework for Integrated Diabetic Lower Limb Care: A User's Guide*. This article presents a worked example of how one NHS Podiatry service improved competencies across the workforce using the framework to identify learning and education needs and targeting clinician education and development across key competency areas. Results show that over the 7-year lifespan of the competency framework, Band 6 competencies improved by 12.4% and Band 7 competencies by 27.1%. These improvements were most marked in radiology and pharmacology dimensions, and for Band 7s, those dimensions most closely aligned to the pillars of advanced practice. Clear differentiation is also evident between Band 5, 6 and 7 clinical grades.

The need for clinicians to demonstrate ongoing competence commensurate with their level of clinical practice has become increasingly important across a wide range of professions and occupations. In health professions, including podiatry, the need to demonstrate congruence with objective measures of competence has been heightened by the statutory requirement for re-registration and revalidation. There is also a growing requirement to describe 'advanced' clinical practice, in order to differentiate it from 'specialist' or 'senior' levels. Relatively little has been published on postgraduate competence within podiatry, particularly within the domain of the diabetic foot.

This paper presents the outcomes of clinicians' self-assessment utilising the Podiatry Competency Framework for Integrated Diabetic Foot Care to demonstrate competency development within one NHS podiatry service across the 7 years since the document was produced. This period of retrospective investigation is appropriate, given that the framework was republished in June 2019 as the *Capability Framework for Integrated Diabetic Lower Limb Care: A User's Guide*. This paper, therefore, provides worked examples of the operational utility of such frameworks, and a measure of competency progression and development within a podiatry service workforce.

Background

The World Health Organization (WHO) defines clinical competence as a framework of skills reflecting knowledge, attitudes and psycho-social and psycho-motor elements (WHO, 2009). These may be augmented by the addition of generic dimensions to include problem solving and critical thinking (O'Connor et al, 2009).

Competency frameworks contribute to healthcare professionals' continuing professional development portfolios by providing evidence that they possess the required level of knowledge, skill, attitude, and ability — including self-awareness — to develop and improve performance within the scope of their professional role. It is evident from the literature

however, that this will not be achieved simply by publishing competency frameworks without any evaluation as to their utility in effectively enhancing practice and measuring the impact of such development in improving the quality and effectiveness of patient care (Cabana et al, 1999; McGlynn et al, 2003; Choudhry et al, 2005).

It is, therefore, important that managers of clinical services explore the use of competency frameworks to identify gaps within the workforce, in order to support clinicians in their own responsibilities and desires to deliver the highest quality of care to their patients. This in no way minimises clinicians' personal commitment to lifelong learning as one of the key features identifying them as members of a profession (Ryan and Deci, 2000).

One valid criticism of competency frameworks is that they may sanction a 'tickbox education' culture, with too much focus on individual performance elements without attention being given to developing the more integrated, holistic fusion of competencies required by professionals. When using a competency framework for clinicians' self assessment, this inherent weakness can be overcome by utilising a sliding scale of competence rather than a binary yes/no option. This approach enables a more detailed assessment of relative strengths and weaknesses to be supported through leaning and development. Therefore, by viewing competencies as what ten Cate et al (2007) describe as 'entrustable professional activities', rather than boxes to be ticked, the learner may be able to more objectively identify areas where their own learning is sub-optimal, requiring additional support and development.

The Podiatry Competency Framework for Integrated Diabetic Foot Care was published in 2012. It was developed by a working group of clinical, academic and professional leaders involved in teaching, planning, supporting and delivering podiatry services across Scotland. It provided, for the first time, 'an important tool that will facilitate benchmarking of existing skill sets, and guidance for the professional development of podiatrists who are keen to become specialists and service leaders within diabetic foot care' (TRIEPod-UK, 2012). These aims are congruent with those described by Calhoun et al (2002) and Cowling et al (1999) when describing competency-based educational systems as being beneficial, not only in assessing proficiency via summative assessments but also in clarifying goals and targets for education and training, and assisting with the identification of gaps and deficiencies to inform clinician training and development needs.

This framework provided a taxonomised approach identifying six levels of knowledge, skills and behaviours (*Table 1*) across a total of 131 competencies divided into 13 Dimensions (*Table 2*).

Table 1. Competency levels: Podiatry Competency Framework for Integrated Diabetic Foot Care, 2012.

Level 2	Support Worker
Level 3	Senior Healthcare Assistant & Technician
Level 4	Assistant & Associate Practitioner
Level 5	Practitioner
Level 6	Senior & Specialist Practitioner
Level 7	Advanced Practitioner
Level 8	Consultant Practitioner

Table 2. Competency Dimensions: Podiatry Competency Framework for Integrated Diabetic Foot Care, 2012.

Dimension 1	Diabetes Practitioner Knowledge, Skills & Behaviours	24 competencies
Dimension 2	Screening & Assessment	5 competencies
Dimension 3	Dermatology in Diabetes Mellitus	3 competencies
Dimension 4	Clinical & Pharmaceutical Knowledge	18 competencies
Dimension 5	Clinical & Radiological Knowledge	10 competencies
Dimension 6	Painful Diabetic Peripheral Neuropathy	7 competencies
Dimension 7	Preventative Ulcerative Care	9 competencies
Dimension 8	Wound Management	16 competencies
Dimension 9	Post Ulcerative Management	5 competencies
Dimension 10	Charcot Neuroarthropathy	11 competencies
Dimension 11	Health Improvement	11 competencies
Dimension 12	Research & Audit	6 competencies
Dimension 13	Leadership & Service Development	6 competencies
	TOTAL	131 competencies

Figure 1. NHS Education Scotland: Pillars of Advanced Practice.

1	2	3	4	5
No confidence in my ability in this area. I require significant support to become confident.	Lacking a little confidence in this area. Would appreciate some support.	Confident in my own ability in this area. A little support may be helpful.	Fully confident in this area of practice. No development required.	Confident enough in this area to teach and mentor others.

Figure 2. Competency Level Likert Scoring Scale.

Methods and rationale

In April 2012, NHS Greater Glasgow & Clyde (NHSGG&C) podiatry service commenced a whole system redesign to bring together all podiatrists across the Health Board area — from acute and community — into a single-system service linked by a single-service model and full electronic records. This redesign provided the service with an opportunity to use the framework as a baseline competency audit, with a view to developing a strategy to support Band 6 and 7 clinicians' learning and development where self-reported competency scores were lower. As part of the redesign work around competencies, job descriptions were also revised in order to ensure that within the Band 7 role there was an appropriate emphasis on the advanced practice elements of leadership, research and facilitating learning and education, as well as clinical practice.

In October 2012, the podiatry service in NHSGG&C used the launch of the framework to carry out an audit of the Band 6 and Band 7 podiatry workforce against the 13 competency dimensions in Level 7 using self-assessment as a means of identifying learning and educational needs across the service as described by Cowling et al (1999).

Self-assessment of competencies is not without its challenges. Høyrup and Elkjaer (2006) questioned whether personal reflection alone can provide a sufficient, objective steer to change practice, and it is widely acknowledged that the accuracy of self-reported measures of clinical competence may differ significantly from objective assessment of the same competencies. Indeed, a number of studies show that the lowest level of congruence between self-assessment and objective assessment of competencies was among healthcare professionals who were deemed objectively to be the least skilled, but had the most self-confidence (Davis et al, 2006). The weight of evidence from this systematic review indicates that physicians and other healthcare professionals have a limited ability to accurately self-assess their own competence and, therefore, it was with a degree of hesitancy that self-assessment was utilised to benchmark the service.

However, since this audit was not concerned with the *actual* self-assessment scores for each domain but the *relative* self-assessment scores between competencies, and between clinical bandings, this potential bias was minimised. Furthermore, since the output was not to be utilised for the purposes of summative assessment or career gateway progression, but to identify learning and education priorities for the workforce, it was concluded that there was no personal benefit to be gained by clinicians in over-inflating their own competency scores. Self-assessment, therefore, in spite of its many limitations, was deemed to be an appropriate reflective methodology to scope and measure relative competencies across the service.

The competency level against which the self-assessment benchmarking took place was Level 7. This enabled all participating clinicians to benchmark themselves against the competencies described for 'advanced practice'. Defining advanced practice is not straightforward, since

what is 'advanced' today will often become 'mainstream' in 10 years' time. In spite of this, however, a significant effort is being made across allied health professions to harmonise advanced levels of practice across the professions.

Health Education England defines advanced practice as '……a level of practice characterised by a high degree of autonomy and complex decision making. This is underpinned by a master's level award or equivalent that encompasses the four pillars of clinical practice, leadership and management, education and research, with demonstration of core capabilities and area specific clinical competence' (NHS Health Education, 2019). NHS Education Scotland (2007) (*Figure 1*) and NHS Wales (2010) use the same four pillars to describe advanced practice.

By benchmarking all bands of clinical staff against the 131 Advanced Practice competencies, areas requiring development *across* all bandings would become apparent, as would any differences *between* bandings. For the 2012 audit, a total of 32 clinicians participated; 22 at Band 6 and 10 at Band 7. For the 2019 re-audit, a total of 77 clinicians participated; 33 at Band 5, 34 at Band 6 and 10 at Band 7, equating to around 42% of the registered workforce. Participants were asked to self-score on each individual competence within the 13 domains using a five-point Likert scale (*Figure 2*).

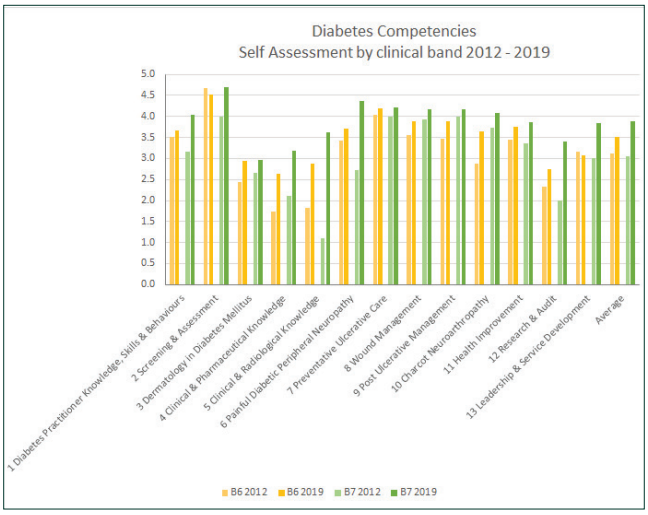

Figure 3. NHSGG&C Podiatry Service Diabetes Competency Dimension scores by clinical banding, 2012–2019.

DIMENSION	B6 2012	B6 2019	B7 2012	B7 2019
1 Diabetes Practitioner Knowledge, Skills & Behaviours	3.5	3.7	3.2	4.0
2 Screening & Assessment	4.7	4.5	4.0	4.7
3 Dermatology in Diabetes Mellitus	2.4	3.0	2.7	3.0
4 Clinical & Pharmaceutical Knowledge	1.7	2.6	2.1	3.2
5 Clinical & Radiological Knowledge	1.8	2.9	1.1	3.6
6 Painful Diabetic Peripheral Neuropathy	3.4	3.7	2.7	4.4
7 Preventative Ulcerative Care	4.0	4.2	4.0	4.2
8 Wound Management	3.6	3.9	3.9	4.2
9 Post Ulcerative Management	3.5	3.9	4.0	4.2
10 Charcot Neuroarthropathy	2.9	3.6	3.7	4.1
11 Health Improvement	3.5	3.8	3.4	3.9
12 Research & Audit	2.3	2.8	2.0	3.4
13 Leadership & Service Development	3.2	3.1	3.0	3.8
Average	**3.1**	**3.5**	**3.1**	**3.9**
		Band 6		**Band 7**
Improvement in average score 2012-19		0.4		0.8
% improvement in average score 2012-19		12.4 %		27.2 %

Figure 4. Self-reported competency scores Band 6 & Band 7, 2012–2019.

Results and discussion

Results were processed, providing each of the 13 domains with a score between 1 and 5, with a score of 1 indicating lower levels of competence and 5 higher levels.

The data were analysed in two ways. Firstly, the baseline data from 2012 for Band 6 and Band 7 clinical bandings were compared with those from 2019. These self-reported competency levels identified the impact on the Band 6 and 7 workforce of the learning and education put in place following the 2012 audit.

Secondly, the 2019 data were used to compare current differentials between three clinical bandings across the service, and to identify further areas for learning and education to inform the 2019–23 learning and education plan for the service.

2012-2019 comparative audit data

From the initial audit in 2012 (*Figure 3*), it is apparent that the overall differential in competency between Band 6 and Band 7 clinicians was not as distinctive as it should have been. Indeed, while there were some areas where a clear distinction was evident, the overall average score for Band 6 and Band 7 clinicians was 3.1 — the same for both bands.

It is evident, therefore, that the Band 7 clinicians presented a significant developmental challenge, since they ought to have been functioning close to the top end of Level 7, commensurate with their role as Advanced Practice Podiatrists.

What is evident from the 2012 competency framework audit is that the dimensions most closely related to the pillars of advanced practice returned some of the lowest scores within the Band

Table 3. Change in Band 6 dimension scores, 2012–2019.

Dimension	% change
5 Clinical & Radiological Knowledge	59.5
4 Clinical & Pharmaceutical Knowledge	55.2
10 Charcot Neuroarthropathy	25.7
3 Dermatology in Diabetes Mellitus	23.0
12 Research & Audit	19.6
9 Post Ulcerative Management	11.3
6 Painful Diabetic Peripheral Neuropathy	8.9
8 Wound Management	7.8
11 Health Improvement	7.5
1 Diabetes Practitioner Knowledge, Skills & Behaviours	4.7
7 Preventative Ulcerative Care	4.7
13 Leadership & Service Development	-3.8
2 Screening & Assessment	-4.0
TOTAL OVERALL	11.9

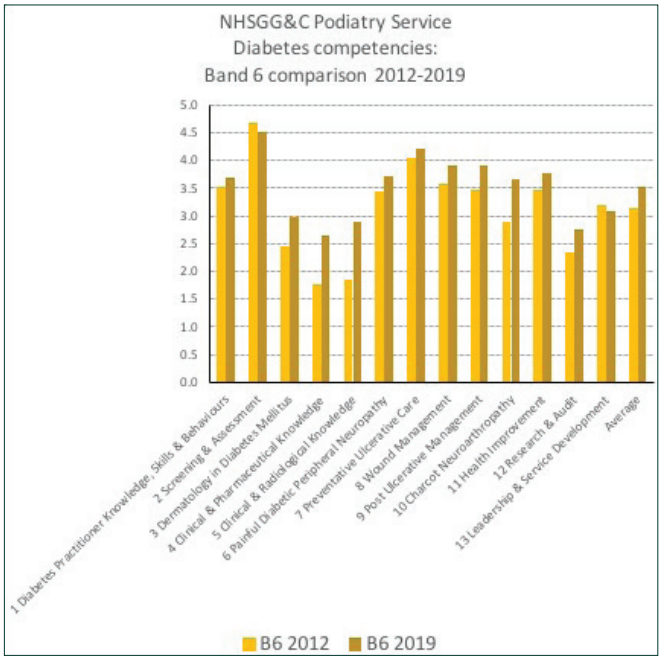

Figure 5. NHSGG&C Podiatry Service Band 6 Diabetes competencies 2012–2019 comparison.

7 workforce. Within the clinical practice pillar, the areas requiring most development were Dimension 3 (Clinical and Pharmaceutical Knowledge) and Dimension 4 (Clinical and Radiological Knowledge), which scored 2.1 and 1.1, respectively. Research scored 2.0 and leadership scored 3.0 (*Figure 4*).

It is interesting to note that the technical, clinical competencies pertaining to ulcer and wound care scored equally highly for both Band 6 and Band 7 clinicians. It is also interesting that in dimensions carried out more frequently in the community relating to screening, assessment and chronic pain management, Band 6 clinicians who tended to be community based scored more highly than their Band 7 colleagues (*Figures 5 & 6*).

Following the audit, learning and education plans were produced between 2012 and 2019, focusing on lower-scoring areas identified by the framework. These became the practice development priorities for Band 6 and 7 clinicians' development.

When podiatrists joined the ranks of non-medical prescribers (NMPs) in August 2013, the service invested heavily in supporting Band 6 and Band 7 clinicians to complete this qualification. This helped address the self-reported lack of confidence in pharmacological knowledge across the workforce. There are now 26 NMPs practising within the service — around 15% of the NHSGG&C podiatry workforce, and 8% of the UK NMPs' total. In addition, processes were put in place to provide opportunity for over 80 podiatrists with POM-S qualification (including Band 5s) to practice at the top of their registration capability by enabling them to supply a limited list of antibiotics and other drugs to patients.

To support learning and development in radiological knowledge, opportunities were provided to upskill staff in diagnostic imaging, with around 106 podiatrists now trained in Ionising Radiation (Medical Exposure) Regulations (IR(ME)R); this represents around 55% of the workforce.

The return on these investments from 2012 to 2019 is evident from *Tables 3 & 4*, with Band 6 clinicians reporting an improvement of around 59.5% in radiological knowledge and 55.5% in pharmaceutical knowledge, and Band 7s an improvement of 229% in radiological knowledge and 51.4% in pharmaceutical knowledge. These improvements have underpinned the Foot Protection service redesign across NHSGG&C, enabling patients to be managed more effectively in

community clinics, and providing more rapid access to appropriate antibiotics and imaging as required.

Further development was provided for Band 7 clinicians by clarifying their responsibility for leadership, research and education within a revised job description. A programme of clinical education for the rest of the service was scoped and delivered by the Band 7 clinicians. This increased their responsibility for facilitating learning and leading the clinical development of the service by improving the impact of published research on clinical practice, particularly during the integration of non-diabetic foot and ankle wounds into the redesigned foot protection service.

The impact of these developments has been significant. In the 2019 audit, Band 7 clinicians reported a 28% increase in the leadership dimension, and a 70% improvement in research and audit when compared to 2012 (*Table 4*).

Over the 7-year period of redesign and practice development, Band 6 competencies improved by 12% to an average of 3.5 and Band 7 by 27.1% to an average of 3.9.

2019 audit data

The 2019 data collection also used the full array of 131 Level 7 competencies and included Band 5 clinicians, as well as Band 6 and 7, thus providing, for the first time, a comprehensive view of competency differentials between Bands 5, 6 and 7.

The results are reported and analysed by individual dimension and clinical banding, enabling the service to identify relative ongoing strengths and opportunities for learning and development in specific competencies, and – importantly, for the first time, to examine differential competency levels between clinical bandings (*Figure 7*).

Overall, it is evident that a clear difference in self-reported competencies is present across all dimensions for each clinical Band.

Band 7 clinicians report higher competency levels than Band 6 in all dimensions apart from dimension 7 (preventative ulcerative care) — where the scoring is equal.

It is also interesting to note that in relation to the more 'technical' and 'practical' skills dimensions, the difference in scores between Band 6 and 7 is much less evident than in those clearly linked to the pillars of advanced practice such as research, leadership and advanced clinical practice (such as pharmaceutical and radiological knowledge), where the differences are more marked.

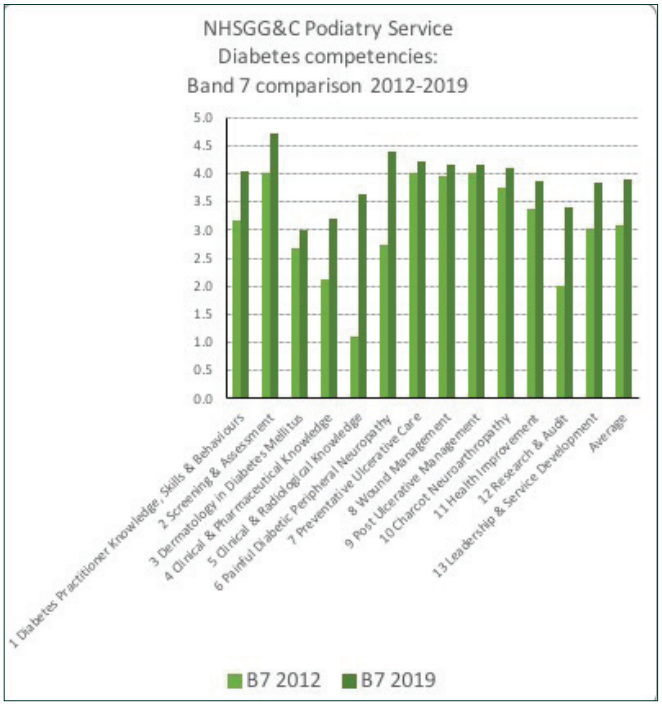

Figure 6. NHSGG&C Podiatry Service Band 7 Diabetes competencies 2012-2019 comparison.

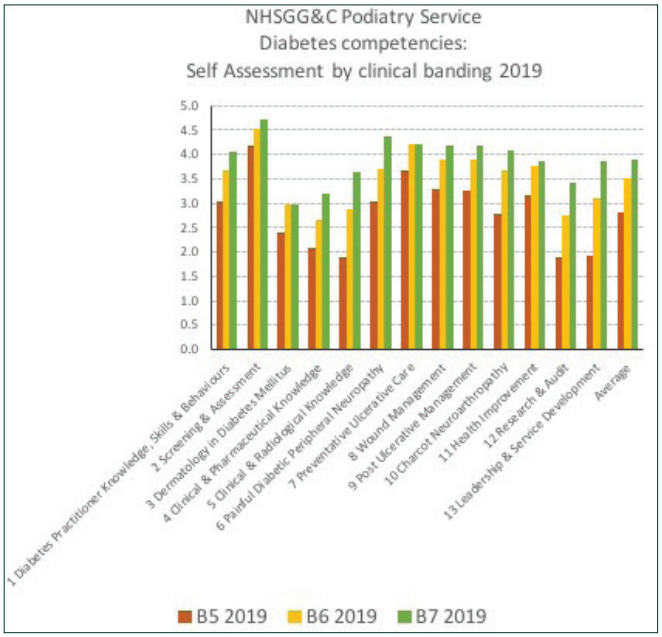

Figure 7. NHSGG&C Podiatry Service Diabetes Competency Dimension scores by clinical banding 2019.

Table 4. Change in Band 7 dimension scores, 2012-2019.

Dimension	% change
5 Clinical & Radiological Knowledge	229.1
12 Research & Audit	70.0
6 Painful Diabetic Peripheral Neuropathy	61.9
4 Clinical & Pharmaceutical Knowledge	51.4
13 Leadership & Service Development	28.0
1 Diabetes Practitioner Knowledge, Skills & Behaviours	26.3
2 Screening & Assessment	17.5
11 Health Improvement	13.5
10 Charcot Neuroarthropathy	10.3
3 Dermatology in Diabetes Mellitus	10.0
8 Wound Management	6.7
7 Preventative Ulcerative Care	5.3
9 Post Ulcerative Management	4.0
TOTAL OVERALL	27.1

Table 5. Differential percentages between Bands, 2019.

	2019 average overall competency score	% competency score difference compared to lower band	Top of scale cost for band*	£ difference compared to lower band	% staff cost difference compared to lower band
B5	2.8	-	£40,200	-	-
B6	3.5	25.1%	£50,100	£9,900	24.6%
B7	3.9	11.1%	£59,000	£8,900	17.8%
Overall difference		36.2%			42.4%

*Agenda for Change Scotland (2019-20 pay scale, including oncosts).

This confirms that the defining dimensions of advanced practice are not so much the technical competencies associated with activities like screening, debridement and wound care, but those associated with the pillars of advanced practice, such as leadership, complex clinical decision making and research and educational activities.

The percentage differentials between self-reported competencies for each Band is interesting when correlated to the pay differential for these bands in Scotland (*Table 5*).

There is a 25% differential in overall self-reported competencies between Band 5 and Band 6 clinicians — correlating closely with a 24.6% differential in pay. The differential competency score between Band 6 and Band 7 clinicians was around 11% — however, the pay differential is 17.8%.

The reasons for this are not entirely clear, however it is possible to hypothesise that Band 6 clinicians may be keen to develop in order to prepare themselves for opportunities to move up to Band 7, whereas Band 7 clinicians may feel that they have hit a clinical 'glass ceiling' with fewer higher level clinical posts to move into. It may also be the case that the Band 7 workforce requires more development opportunities, in order to help them achieve their full potential — particularly in those areas commensurate with the pillars of advanced practice, and that — while they can provide development and learning for lower grades — it is more difficult and expensive for them to source internal development and learning opportunities for themselves.

Conclusion and recommendations

These results demonstrate the practical utility of a competency framework by benchmarking self-reported competencies, in order to construct a learning and education programme. They also provide compelling evidence that using competency frameworks in this way has a positive impact on average self-reported competencies across all dimensions.

It is also encouraging to note that the service has been able to quantify a return on the organisation's investment in learning and education for Band 6 and 7 clinicians, with significant improvement evident in areas identified as weaker in 2012.

It is evident that further development of the Band 7 workforce is necessary to enable them to practice at an optimal differential from Band 6 clinicians, however, significant progress has been made in this area, and focused opportunities for growth are planned as part of the development of the leadership and research advanced practice pillars. These include the development of clinical academic posts and more integrated research activities within mainstream service delivery.

The revised version of the original competency framework was published in June 2019 as the *Capability Framework for Integrated Diabetic Lower*

Limb Care: A User's Guide. The shift in emphasis from 'competencies' to 'capabilities' reflects the need described in this paper for frameworks to focus on outcomes and growth rather than on simply fulfilling the minimum requirements of a role. It is hoped that this paper provides some insight into how the new emphasis on capabilities may be utilised, in order to deliver better outcomes, not only by developing clinicians, but in improving services to patients. ■

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