



WRAP

WORKFORCE RADIOGRAPHY REFORM PROGRAMME

Workstream 3

Driving innovation in pre-registration

Practice-based learning

(DRAD and TRAD)

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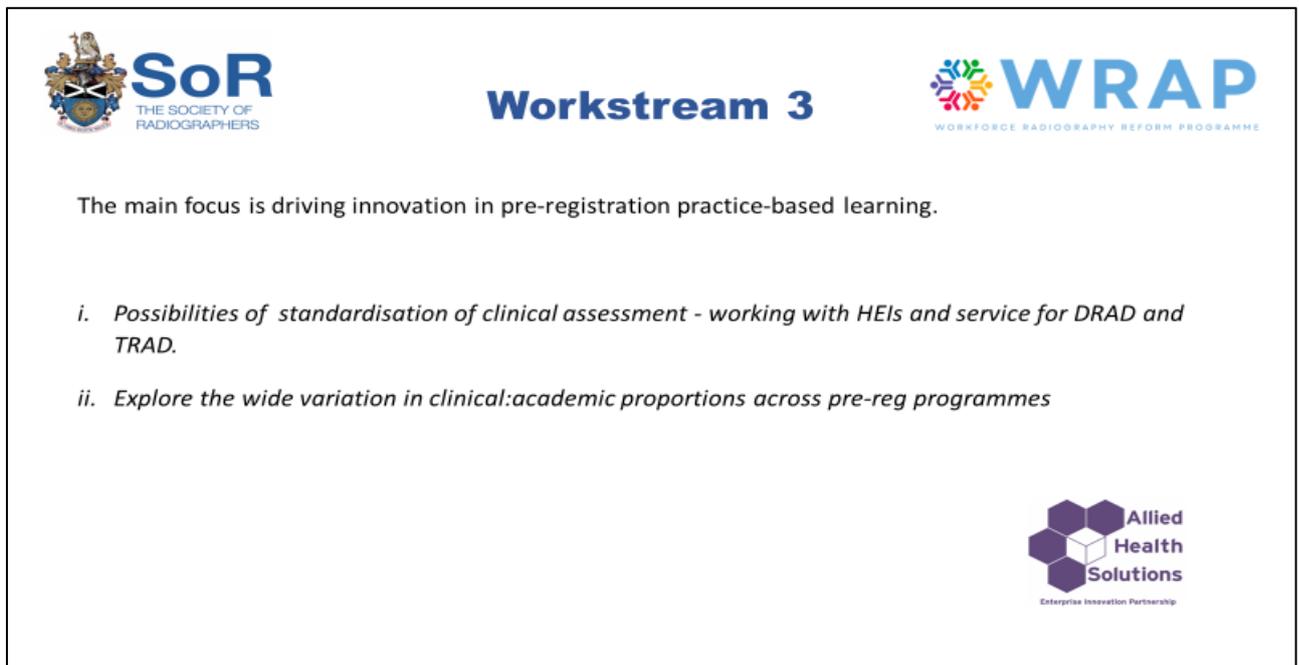
Background

The strategic aim of Workstream 3 was to drive innovation in pre-registration practice-based learning. The delivery objectives for HEE at the time of outlining the AHP Workforce Reform Programme were to support HEIs to achieve full recovery of AHP placement hours and to prepare for, and support, on-going growth of professions.

Initially, the main focus of this workstream for radiography, was to explore the possibility of a standardised clinical assessment, working with HEIs and service, for DRAD and TRAD, and to explore the wide variation in clinical:academic proportions across pre-reg radiography programmes (figure 1).

There was extensive interest and engagement in this workstream. For the model of engagement for both DRAD and TRAD please see separate document¹. For an example of a DRAD case study site agenda see appendix 1 and for an example of TRAD Advisory Group (TRAD AG) agenda see appendix 2.

Figure 1: Initial Focus for Workstream 3



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The main focus is driving innovation in pre-registration practice-based learning.

- i. Possibilities of standardisation of clinical assessment - working with HEIs and service for DRAD and TRAD.*
- ii. Explore the wide variation in clinical:academic proportions across pre-reg programmes*

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At the first meeting of the TRAD Advisory Group there was a general agreement that standardisation of 'clinical assessment' should be referred to as 'practice assessment' otherwise there was a risk of

¹ WRAP model of engagement for workstreams 3,4,7,8b,9b

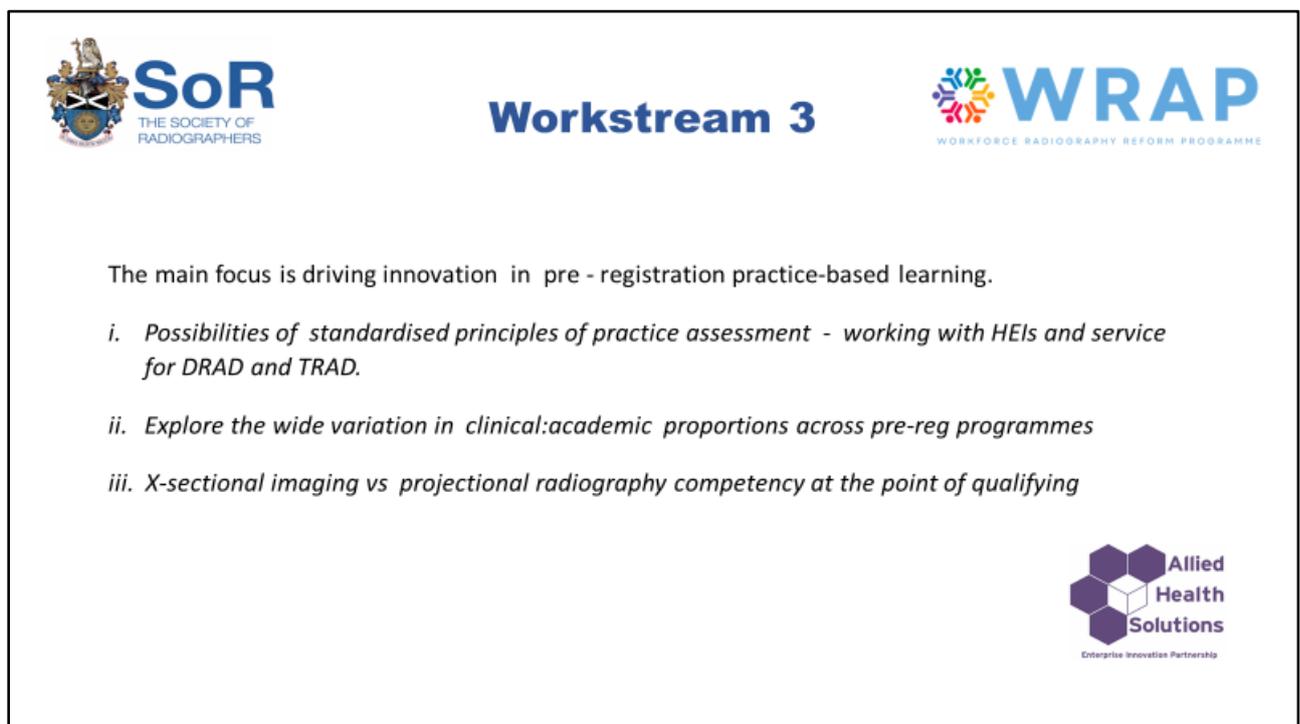
closing off opportunities. It was also noted that the report from the SoR Therapeutic Radiography RePAIR project² stated:

'Of those responding to the survey, 80% of HEIs (n=8) and 96% of HCPs (n=44) were in support of further work to explore standardisation of all clinical assessment documentation.'

The TRAD AG observed that the variation in student experience may have an impact on why students' leave the profession early – *'they often go through training and then don't get their first choice of job. As a result of the vast differences in how they've been trained and how they've been assessed it may be difficult for them to settle into their first post and then they opt to leave the profession'*.

For the DRAD case study sites there was concern about the changing service and whether the sector is developing the workforce that is needed in 2023. It was acknowledged, by HEIs, that it is a very *'fine balance and we do not want to train people to do things they do not need to know'*. The main concern focused on a CT ready workforce. The need to increase the CT scanning capacity was reported in 2020 by Professor Richards³. Recommendation 8 in his report recommended a 100% increase in CT scanning capacity, and recommendation 12 that there should be a major expansion in the imaging workforce, specifically 3,500 additional radiographers and 2,500 additional support workers.

Figure 2: Revised focus for Workstream 3



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The main focus is driving innovation in pre - registration practice-based learning.

- Possibilities of standardised principles of practice assessment - working with HEIs and service for DRAD and TRAD.*
- Explore the wide variation in clinical:academic proportions across pre-reg programmes*
- X-sectional imaging vs projectional radiography competency at the point of qualifying*

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² <https://www.sor.org/learning-advice/professional-body-guidance-and-publications/documents-and-publications/policy-guidance-document-library/reducing-pre-registration-attribution-and-improving>

³ <https://www.england.nhs.uk/wp-content/uploads/2020/10/BM2025Pu-item-5-diagnostics-recovery-and-renewal.pdf>

In consultation with SoR and HEE, the focus for Workstream 3 was amended. The revised activities included the possibilities of standardised principles of practice assessment and cross-sectional imaging vs projectional radiography (figure 2).

This report sets out the activities and associated outputs from Workstream 3 under the following section heading:

- A. The Principles of Standardised Practice Assessment
- B. The Variation in Clinical:Academic Proportions across Pre-registration Programmes
- C. X-sectional Imaging (CT) versus Projectional Radiography at the Point of Qualifying
- D. Utilising the Clinical Training Capacity
- E. Recommendations from Workstream 3
- F. Appendices

Section A: The Principles of Standardised Practice Assessment

There is a growing consensus that a standardised approach to pre-registration practice⁴ assessment would benefit the service (DRAD and TRAD), and result in greater parity of clinical/practice opportunities for students.

The service would undoubtedly benefit from a reduction in the number of different practice assessment documents that they have to navigate. They would also have more confidence in the knowledge and skills of the newly qualified radiographer. Radiotherapy Service Managers who are in favour of a standardised model of assessment claim that students who have been assessed to this agreed standard '*will be shown to be fit to practice*'.

Before an agreement, about the detail of any UK or national standardised assessment, can be reached, there needs to be collaboration and cooperation between all the HEIs that the way forward is to develop a standardised model. This agreement will need to include an agreement from the service providers about the knowledge and skills a newly graduating radiographer needs to have. A particular concern for DRAD is the rapidly changing imaging landscape. There is evidence that it is easier to reach a regional consensus rather than a UK wide consensus, but this does not address the equal opportunities concern.

Principle 1

All HEIs in the UK, that educate and train radiographers (DRAD and TRAD), must reach an agreement that standardised practice assessment is mandatory.

Some regions, notably North West England and the Midlands, have worked together, within region, to develop a regional standardised approach for DRAD, based on the number of hours that the students spend in practice. The Society of Radiographers does not stipulate a number of hours, but prefers a competency-based approach. An hours-based model must be evidence-based rather than an agreed compromise between local HEIs. As the HEIs revalidate their programmes some are changing their student practice model to accommodate a regional hours approach and some are moving away from an hours model to a competency model.

Principle 2

All HEIs should agree whether they are going to use an hours-based model or a competency-based model.

For a standardised approach to be effective a digital practice assessment document will need to be designed and subsequently adopted by service providers and HEIs. An online model that is widely used by healthcare students exists in North West England: PARE – Practice and Assessment Record and Evaluation⁵. The WRAP team has concluded that this model, which is open to all, has a great deal to commend it.

⁴ Practice is the preferred term, it includes clinical and non-clinical.

⁵ <https://onlinepare.net>

Online practice assessment documentation must be reliable and the technology readily available, and straightforward to operate, to ensure that all students, practice educators and tutors can always access the system. For some parts of the sector this will be a significant change and a noticeable departure from the current model.

Principle 3

Digital practice assessment documentation should be developed for DRAD and for TRAD based on the PARE model. The benefits of an online practice assessment documentation model must be clearly articulated.

Many HEIs and a few service providers are using simulation to help prepare the students and create more clinical capacity. *‘An integrated approach to using simulation-based interventions can both enhance learning opportunities within the workplace; close to the point of care, as well as better prepare students, trainees and staff to optimise their level of preparation for planned changes in their clinical or working environment or areas of practice⁶.’*

The first recommendation in the SoR’s guidance for using simulation in pre-registration education and training of therapeutic radiographers is that *‘HEIs and clinical placement providers involved in training and education of therapeutic radiography students should seek to align simulation activities with programme learning outcomes and the HCPC standards of proficiency’.*

A pdf version of the guidance is available [here](#).

For any standardised model of assessment, the extent to which simulated learning is assessed must be agreed. Arguably this is one of the main challenges for a national approach to standardisation of practice assessment.

The TRAD AG argued that simulation use and resource varies significantly across the UK and if simulation becomes part of standardised assessment it might hinder the work to develop standardisation.

Principle 4

The extent to which simulation forms part of the standardised practice assessment, and how simulated practice is assessed must be determined.

It is important to recognise that HEIs are autonomous organisations run on a competitive business model. For many HEIs, their unique selling point, when marketing their radiography courses, is the partnership with their service colleagues; the practice placement model and the practice learning opportunities that students have. There is considerable variation in the amount of time a student will spend in service depending on the HEI placement model. It is unclear how much variation a standardised model of practice assessment will tolerate.

⁶ [National Strategic Vision of Sim in Health and Care \(hee.nhs.uk\)](http://hee.nhs.uk)

The TRAD AG suggested that principles of standardisation should allow for flexibility and local variations. Concern was expressed that standardisation might stifle innovation. The group agreed that a core set of competencies could be agreed but broader practice assessment is more challenging. There were also questions about what happens if **not** everyone signs up to a UK-wide agreement and whether a standardised approach to assessment should become an essential component of professional body accreditation?

Principle 5

A standardised approach to practice assessment should respect the HEIs unique approach to practice experience.

Across the UK there are different models of pre-registration education and training:

- Four-year undergraduate programme
- Three-year undergraduate programme
- Three-year apprenticeship programme
- Two-year postgraduate pre-registration programme

Furthermore, some courses are delivered at a distance. All learning outcomes for each of these programmes, irrespective of model of delivery, must comply with the HCPC's Standards of Proficiency⁷.

Principle 6

A standardised practice assessment must take into account all models of radiography (DRAD & TRAD) pre-registration education and training.

Not all pre-registration students will be able to experience the complete range of clinical procedures during the lifetime of their course. The nature of students' clinical experience is very dependent on the type of patient, the clinical conditions that the patients' present with, and the type of service provided by the clinical placement.

Furthermore, not all students will pass every practice assessment first time. HEIs will have a validated approach to the number of clinical assessment attempts permitted, and the timeframe within which they have to be passed.

⁷ <https://www.hcpc-uk.org/standards/standards-of-proficiency/radiographers/>

Principle 7

A standardised approach to clinical assessment must take into account the potential variation in student clinical experience and the HEI method for clinical repeats, so that no student is disadvantaged.

The Principles of Standardised Assessment can be accessed [here](#).

Section B: The Variation in Clinical:Academic Proportions across Pre-registration Programmes

As already mentioned, (page 7), HEIs are independent of the NHS. They are required to ensure the pre-registration programmes comply with the HCPC (Health and Care Professions Council) standards:

- Standards of Proficiency⁸
- Standards relevant to Education and Training⁹

The programme leads are also obligated to design a programme that complies with their individual university academic regulations. In addition, the programme leads are actively encouraged to seek professional education approval through the College of Radiographers' Accreditation and Approval Process¹⁰. The latter *'ensures that programmes of education and training related to the clinical imaging and oncology radiographic workforce, maintain, and continue to develop the highest standards of clinical imaging and oncology practice and conduct'*.

Any model of education and training that maps to a standardised model should reflect the agreed standards, irrespective of whether the standard is regulated or not. This also applies to any standardised practice assessment model that may be adopted. If a principle, that states the number of hours in practice, is approved, then an optimum clinical:academic ratio should be explored.

As yet there is no agreement as to whether students should gain clinical experience outside of the 'normal working day'. Some managers advise that *'we should look at training students in a more flexible and agile manner'* others are much more reticent and one HEI pointed out that *'outside 9-5 is not a programme learning outcome'*. Currently students occasionally attend a clinical site between the hours of 8am and 8pm, but they seldom go into service at night or at the weekend. However, this is changing and in the South West all first year DRAD students experience being in the clinical environment between 8am and 8 pm and by the time they are final year students they are rostered to gain experience throughout the 24 hour day.

'The "out of hours" work experience is very different to the experience gained during 'normal' hours. I feel this would better prepare them for the real world.'

Radiology Services Manager

A Principal Lecturer noted that cooperation between the HEI and the service is central to implementing a more flexible rota. They went on to explain that in their HEI, *'we don't have a problem with insurance at all with BSc students working out of hours. All the Radiology Service Managers are very supportive of this model, and our students get a well-balanced training programme'*.

However, some university staff are saying that they *'can't force their students to do anything outside 9.30-4.30pm now they are fee paying'*. Conversely, other university staff report that they are telling the prospective students that they will be gaining clinical experience outside of a traditional day.

⁸ <https://www.hcpc-uk.org/standards/standards-of-proficiency/radiographers/>

⁹ <https://www.hcpc-uk.org/standards/standards-relevant-to-education-and-training/>

¹⁰ <https://www.collegeofradiographers.ac.uk/education/education-approval>

Interestingly some HEIs encourage students to join the trust Bank system, where they are paid for any additional experience.

It is important to note that a level of supervision needs to be maintained so it is not always possible for students to get out of hours experience in the smaller community centres. Also, practice assessments can be difficult to organise because you there needs to be no disruption to the flow of the patients. As one head of radiography education explained: *'for a trauma assessment you would need to make sure you had a Practice Educator present and enough staff to ensure patient flow through the department'*.

Eighteen¹¹ HEIs kindly provided detailed information about the amount of time their students spend in placement and whether this time is mandated. The percentage of the whole course that the students spend in placement ranged from 60 percent to thirty-eight percent for DRAD and 60 percent to thirty percent for TRAD. The extent to which attendance in practice is mandated also varied: two HEIs reported they did not formally mandate attendance; nine that they required one hundred percent attendance; one required ninety-five percent attendance; four HEIs that they stipulated ninety percent attendance and one eighty-five percent.

This detailed information can be found [here](#).

The ratio between academic weeks and practice placement weeks varied between the HEIs and within HEI by year of study. The amount of time spent in simulation was not included because the HEIs are at very different stages as to how they use simulation and furthermore, whether the simulation is provided in the service or in the HEI or both.

Other than one DRAD pre-registration programme all The HEIs, that submitted evidence, report that Yr 1 students spend more scheduled time on academic study than on practice placement. The ratio normally varies between 1.5:1 (academic:practice) and 2.3:1. There are two notable exceptions for DRAD of 3.9:1 and 8:1 where the students spend very little time in the practice placement setting during the first year.

For Yr 2 DRAD programmes the students mostly spend more time on academic study than in a practice placement setting. However, the ratio between time spent on academic study and the time spent in practice placement is must closer to one with a range of 1.8:1 to 0.8:1. Similarly for TRAD, although one programme reported that their Yr 2 students spend twice as much time on scheduled academic study than in a practice placement setting.

Attendance in practice placement during Yr 3 is very varied ranging from 0.5:1 (TRAD) to 2.9:1 (DRAD). Yr 3 DRAD students spend more time in practice for four out of the 12 HEI programmes. Similarly, for Yr 3 TRAD students, two out of the five programmes reported that they spend more time in practice.

¹¹ 4 provided information for both DRAD and TRAD; 11 for DRAD only; 3 for TRAD only

Section C: X-sectional Imaging (CT) versus Projectional Radiography Competency at the Point of Qualifying

During the initial WRAP meetings, with the case study sites, it became very clear that the priority for many service managers was staffing the CT department. As one manager explained: *'with the new CDCs we are needing to increase the workforce. We will need to employ a further 20 radiographers next year to staff CT and MRI, because we know that with the number of cancer referrals, we need to focus our capacity on CT and MRI'.*

Many CT departments are training and upskilling their radiography staff in CT leaving very little capacity for the students to gain CT experience.

Some of the university staff, at the case study sites, expressed their concern about the CT knowledge and skills of the students. One Principal Lecturer explained that although they have a CT scanner on site, it is a real challenge to provide all 130 students, in one cohort, with a CT practical session which has a maximum of six students per session.

'I have heard of so many students not getting the CT experience.'

Pre-registration diagnostic radiography programme lead

The extent to which the CT modality leads proactively support students, to gain clinical experience, while they are in their department varies. Some students report: *'when we were in CT we were sat at the back of the room and not actually had contact with the scanner'.* Other students have a much better experience and are encouraged to be actively engaged in the scanning process and *'are allowed to lead on CTs when in that area'.* It is important, that the practice experience students are getting, is more standardised. A manager carefully explained: *'Over the last couple of years students have been going to different sites during their 3 years of their education and training. By the time the third-year students, who were new to our site and hadn't been given the same CT opportunity as our students, arrived, they had less knowledge and ability to perform CT scans. Previously, the students didn't rotate between hospitals. By the time they were third-year students I was very confident that they were going to be able to perform the minimum of a CT head and a KUB and also going to be able to do the more complex scans, because we had given them the opportunity to experience that type of work'.*

It is important that Practice Educators from neighbouring trusts, who train students from the same HEI, meet regularly to discuss the student practice experience in the different trusts. They should also share the approach they take to support Band 5 and Band 6 radiographers to gain and maintain their CT experience.

As the CT service continues to expand the workforce must be educated and trained to ensure the service can be delivered. Recommendation 12 of Professor Richards' 2020 report³ stated that additional training places should be provided for radiologists and radiographers and initiatives will be needed to meet demand. Historically, newly qualified radiographers spent a fixed period in what is sometimes referred to as X-ray, plain film or more recently projectional radiography. However, this model is not sustainable and many service managers are looking to employ newly qualified radiographers directly into CT.

As one manager explained: *'as part of our recruitment incentives, we offered newly qualified radiographers the opportunity to start CT training from day one. We developed a competency*

framework for them, where they would have an induction programme on each of our scanners. They started in the outpatient department and finished in the acute setting, where there is greater service pressure. The radiographers who had been through this programme were very proficient in CT'. A manager from another case study site reported that 'we do accept newly qualified radiographers who wish to work in CT. However, we are not in a position (roster limitations) to rotate everybody through CT and the students soon lose that knowledge and skill. We really need to explore how we support students once they qualify to maintain their skills and knowledge base, rather than losing it over time.'

One of the challenges for managers, is how to judge the level of CT knowledge and skills of newly qualified radiographers. As part of WRAP a task and finish group was established to design a prototype e-Passport that would hold a record of a student's CT experience. Some students show a particular interest in CT and opt to 'major' in CT as part of their final year of study. They may consider undertaking a service-based CT project and/or requesting additional CT placement experience. This extra practice can also be recorded in the e-Passport.

In the East of England, they are piloting a CT/MRI onboarding model with industry partners. They are exploring with HEE whether the two-week programme can be integrated into the final part of the student radiographers' pre-registration programme. The hope is that students who have completed the onboarding programme will be CT/MRI ready when they qualify.

'I was a mature student. Year one practice was in plain film, but then I was rostered into CT, and I liked that modality. In my final year I undertook an audit in CT.

I wanted to specialise in CT when I qualified. I was told you have to work in plain film first before you can progress. I didn't understand why I had to spend time doing something that I may not want to do long term, it was quite frustrating for me.'

Newly qualified radiographer

Please click [here](#) to see a pdf containing information about the CT/MRI onboarding programme.

In consultation with the SoR's CT Advisory Group it has been agreed that an e-Passport could also be used to record ongoing CT experience and would be of considerable benefit to the manager when judging the CT experience of international applicants.

The prototype CT e-Passport can be accessed [here](#).

Section D: Utilising the Practice Placement Training Capacity

Matthew Southern, Clinical Imaging Lead for AECC University College, and HEE SE AHP Workforce Fellow for Radiography, has led on the development of a diagnostic radiography practice placement capacity tool which can be accessed from <https://apps.aecc.ac.uk/public/capacityModel>.

Matthew has worked very closely with Juliet Borwell, Practice Learning Programme Lead, South East Region, Health Education England. Juliet's evidence is that there is sufficient training capacity if we approach demand vs capacity in a coordinated systematic way. Juliet attended the fourth meeting of the TRAD AG and presented her approach to the placement capacity conundrum.

Her presentation can be accessed [here](#).

Figure 3: Practice Learning Capacity framework

Juliet explained that capacity *'tells us how much of something we have available to use at any one time'*. She went on to link capacity to ability: what we can safely achieve and activity: what we actually use.

She highlighted that we could establish placement capacity if three factors align: **function, size and ability**.

- **Function** must be relevant to programme outcomes,
- **Size** must depend on size of department and skill mix, and
- **Ability** of the team is influenced by other interdependencies.



This capacity framework (figure 3) offers identification of **unutilised areas**.

Paul Matthews is a Practice Educator in Surrey and Sussex Healthcare NHS Trust and between 2018 and 2024 he will have increased the weekly clinical placement capacity from ten with a focus on 'plain film' to 30 with a focus on innovative placements.

His new supervision model to optimise the utilisation of the clinical training capacity is available [here](#).

In Scotland there is the additional challenge of a four year degree programme and the demands this makes on the practice capacity. Elaine Wilkinson's paper¹², provides further evidence that changing the clinical placement model could yield greater practice placement capacity.

Many HEIs are increasingly working with independent service providers to build practice placement capacity. This is something the College of Radiographers supports and actively encourages, subject to appropriate support and agreement through a practice placement extension as part of the approval process. However, what is unclear is the extent to which students are placed in the independent sector and the level of importance that students place on this learning opportunity. For the experience of a radiology services manager from the private sector see BOX A.

BOX A: The experience of a radiology service manager in the independent sector.

'We have really struggled to a) get students to turn up consistently and b) to get them to spend the allocated hours in the department. Here they have the opportunity of the working with a radiographer on a 1:1 basis. Most reports are written within a day so they can follow the patients through. We could have more on site, but we do not feel they are committed to our department. 'As an employer we are not always confident they are ready for the employment market. If they are not able to work a full week that sends a negative message to the department. I would rather have fewer students who are going to stay rather than many more with a high attrition.'

In Scotland, some HEIs have a contract with the independent sector. For example, in Aberdeenshire there is a large private hospital that takes a few students (2-4), but not all have contracts. They do not have trauma centres, so it is important that this this space is utilised carefully. However, they do have CT, MRI and ultrasound services so potentially the students could get a very good experience.

It is important to highlight that many departments are recruiting international radiographers. WRAP has not found any evidence of the impact on practice placement capacity of this significant development.

Section E: Recommendations from Workstream 3

1. The principles of standardised assessment should be tested widely. To enable this to happen it is recommended that a UK wide task and finish group, comprised of DRAD and TRAD representatives from the HEIs and service providers, is established.
2. The standardised assessment task and finish group should also assess the suitability of the digital practice record, PARE – Practice and Assessment Record and Evaluation for radiography.
3. The Society of Radiographers CT Advisory Group should review the CT e-Passport prototype, engage with the WRAP CT e-Passport Task and Finish Group, and agree a model for piloting and evaluating this tool.
4. The Society of Radiographers should work with the sector to further understand the extent to which the practice placement capacity is fully utilised. This will require a closer collaboration between all stakeholders.

¹² Wilkinson, E (2022) Survey of clinical placements within pre-registration diagnostic radiography programmes in the UK and Ireland. <https://doi.org/10.1016/j.radi.2022.12.002>

Section F: Appendices

Appendix 1



Radiography Workforce Reform Priorities

West Herts Teaching Hospitals diagnostic radiography case study site advisory group

Meeting 2 agenda

Wednesday 25th January 09:00-10:30

Time	Item	Lead
09:00 – 09:05	Welcome and apologies	Nuala Littlechild
09:05 – 09:15	Notes from meeting 1	Lindsey Bunn
09:15 – 09:45	Workstream 3	Mary Lovegrove
09:45 – 10:00	Workstreams 4 & 8	Mary Lovegrove
10:00-10:20	Other priorities for the WHTH case study site	Nuala Littlechild
10:20	Date of next meeting	Nuala Littlechild

Appendix 2



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NHS
Health Education England

WRAP TRAD Advisory Group

Meeting 4 February 21st 13:30-15:00

AGENDA

Time	Item	Presented by
13:30	Workstream 3: Clinical Training Capacity Conundrum	Juliet Borwell HEE
14:00	Welcome Actions from meeting 3, see notes	Mary Lovegrove
14:10	Examples of how departments employ and deploy support workers continued: <ul style="list-style-type: none"> • Lancashire Teaching Hospitals NHS Foundation Trust • Guy's and St Thomas' NHS Foundation Trust 	
14:40	Enhanced Practitioners	
14:50	Update about data collection	Mary Lovegrove
14:55	Next meeting – meeting 5 March 8 th 13:30-15:00 (to be confirmed) Final meeting – meeting 6 March 21 st 13:30-15:00 (to be confirmed)	