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Abstract

Objectives

This article combines a brief narrative review of the Richards Report with an overview of current radiographer advanced and consultant clinical practice (ACCP) to provide suggestions for future ACCP within radiography.

Key Findings

The 'Diagnostics: Recovery and Renewal' report by Professor Sir Mike Richards, published in 2020, has identified a need for improvements to be made to diagnostic services. His recommendations include the introduction of Community Diagnostic Hubs (CDHs) that would provide quicker and easier access to diagnostic tests for patients ⁽¹⁾. A narrative review around the concept of Advanced and Consultant Clinical Practice (ACCP) for radiographers demonstrates the capability of the radiographers to expand their role. The article concludes with a vision of how CDHs could potentially provide multiple career pathways for radiographers working at this level of practice.

Conclusion and Implications for Practice

It is acknowledged that some of these concepts are a combination of visionary and aspirational in outlook rather than being entirely based on current practice. The intention of this article, and the implications for practice, are to support on-going discussions to enable radiography, as a profession, to seek ways and opportunities to do things differently whilst ensuring that patient remains at the centre of the services we deliver.

Key words

Advanced, Consultant, Diagnostics, Pathways, Practice, Radiographer

Classifications

Advanced Practice

Consultant Practice

Community Diagnostics

Patient Pathways

Service Improvement

Abbreviations

ACCP Advanced and Consultant Clinical Practice

ATLS Advanced Trauma Life Support

CDH Community Diagnostic Hub
CT Computed Tomography
DXA Dual Energy X-Ray Absorptiometry
ECG Echocardiogram
FLS Fracture Liaison Services
F2F Face to Face
GIRFT Getting It Right First Time
GP General Practitioner
HCP Healthcare Practitioner
MDT Multidisciplinary Team
MRI Magnetic Resonance Imaging
MSK Musculoskeletal
RSW Radiology Support Worker

Introduction

The 'Diagnostics: Recovery and Renewal' report by Professor Richards, published in 2020, has acknowledged that, even pre-pandemic, there was a real need for improvements to diagnostic services ⁽¹⁾. In 2019 the NHS Long Term Plan identified that services, including imaging, were struggling to keep pace with rising demand ⁽²⁾ caused by various factors including increasing hospital attendances, increased direct access referrals by General Practitioners (GPs) and increased utility of diagnostic tests which include imaging. This has resulted in a key recommendation within the Richards Report for Community Diagnostic Hubs (CDHs) to include imaging services as well as carefully configured patient pathways ⁽¹⁾. This article is a vision piece considering how this report opens up possibilities of Advanced and Consultant Clinical Practice (ACCP) for radiographers. To set the scene, there will be a brief narrative review of what ACCP is. The article will then outline a vision of possible radiographic roles that could be implemented to maximise the potential of the CDHs.

Literature review

The narrative review component of this article is based upon key national reports and a limited literature search as outlined below.

Database: CINAHL.

Search terms: Consultant Practice / Practitioner OR Advanced Practice / Practitioner

Imaging / Radiography

Radiographer

Search period: 2000 onwards

The remainder of the article suggests possibilities (rather than describes established roles) about how radiographers could embrace ACCP within the context of CDHs to improve patient services.

The case for reform

Hospital based capacity is finite yet demand for imaging is increasing with growth per annum for Computed Tomography (CT) of 6.8%, Magnetic Resonance Imaging (MRI) of 5.6% per annum, general ultrasound of 2.8% per annum and Dual Energy X-Ray Absorptiometry (DXA) of 4% per annum ⁽¹⁾. This, especially when combined with the UK lagging behind other countries in terms of imaging equipment per head of population ⁽³⁾, and the impact upon diagnostics of the Covid-19 pandemic all lead Richards to argue the case for a real need for investment coupled with reform of diagnostic services ⁽¹⁾. A key part of the proposed reform echoes themes from the Getting It Right First Time (GIRFT) Programme National Speciality Report for Radiology which argues that the separation of acute and elective imaging leads to more efficient use of resources and a more patient centred approach ⁽⁴⁾. This separation of services can also help solve another potential challenge; namely the inability to develop increased capacity and associated infrastructure on land locked hospital sites. All these factors support the arguments for moving some diagnostic services away from acute hospital sites. Consequently, Richards has made a variety of recommendations including improved patient pathways and the establishment of CDHs. As the model of delivery within CDHs is currently evolving there is opportunity for flexible and innovative ways of working to be embedded within their design. This supports the underlying principle of his report that the traditional delivery model centred on hospital sites needs fundamental change to create service provision that is both patient centred and efficient.

Radiography role development

The inclusion of imaging within the CDHs, and the need to address the impact upon diagnostic services caused by the Covid-19 pandemic, means there are very real opportunities for ACCP for radiographers. Radiographers are now familiar with patient facing advanced practice roles together with the associated increase in autonomy and responsibility rather than career progression being technology or management focused or

even time served as, possibly, in years past ⁽⁵⁾. To sustain the workforce overall Richards discusses expansion of advanced practitioner roles, backfilling with increased numbers of assistant practitioners ⁽¹⁾. The support workforce provides increased capacity to enable radiographers to move into the more specialist, advanced and consultant roles and it has long been the vision of the Society of Radiographers that Radiography Support Workers (RSWs) and Assistant Practitioners (APs) should have the opportunity to develop their career within radiography ⁽⁵⁾ therefore making it an attractive career choice. It is vital, therefore, that a more robust, logical and sustainable career escalator is developed and established from RSW onwards in order to aid recruitment and retention into the radiographic workforce thereby ensuring the longevity of the profession and its development.

Whilst Richards discusses expansion of advanced practitioner roles ⁽¹⁾ the report is not definitive in what those advanced roles, other than reporting of plain x-rays, might be and this is where the opportunity arises. It can also be argued that radiographer reporting, if that is the single additional area of practice a radiographer adopts, is unlikely to meet the requirements of the multi-professional framework for advanced clinical practice ⁽⁶⁾. This framework, published to ensure consistency between professions for individuals, is very specific in that each role must encompass each of the four pillars i.e. the area of advanced clinical practice as well as leadership and management, education and research ⁽⁶⁾.

Before outlining visions of potential radiographer ACCP roles, it is important, first, to consider what ACCP actually is. Advanced and Consultant Practice is a career structure that operates across all healthcare professions and is not unique to radiography. There are published standards for Advanced Clinical Practice ⁽⁷⁾ with the Consultant standards due to be published shortly. It is thought that this type of framework will help support the transition between these two levels of practice specifically within the radiography profession ⁽⁸⁾. These standards require the roles to incorporate the four pillars (also referred to as domains).

These pillars are expert clinical practice, leadership, practice and service development (including research and evaluation) and education (including professional development). Whilst the capabilities within three of the pillars are the same for all Advanced or Consultant practitioners (as shown in table 1), the clinical pillar is where the variation occurs enabling each healthcare profession to adapt and develop their specific skillset within their particular service. The recommendations from the Richards report therefore highlights an ideal opportunity for radiographers to take the lead across the many different pathways that will operate within a CDH in order to develop bespoke ACCP roles in order to enhance services for patients.

Pillar	Overview
Leadership	<ul style="list-style-type: none"> • Provides local leadership within place of work, • Sufficiently expert in own area of practice to be able to innovate with regard to service delivery based on own experiences of role, influences future direction of service provision, can apply their experiences to other pathways • Supporting individuals in their own development across the 4 tier structure
Education	<ul style="list-style-type: none"> • Sharing own knowledge and skills both locally and on the national stage • Succession planning – educating workforce so role becomes embedded • Workforce education – creating a learning environment, educating local workforce • Contributing to education in the broader sense e.g. pre-registration radiographers
Practice & Service Development	<ul style="list-style-type: none"> • Evidence base embedded in own practice, • Identifies gaps in evidence base liaising with academic and clinical partners to address this • Disseminates experiences / service evaluation and research into own practice to wider audience • Able to assess effectiveness (ranging from patient experience, patient outcomes to cost-effectiveness)

Table 1: Pillars of ACCP ⁽⁶⁾.

Radiographer reporting constitutes ACCP provided the four pillars are incorporated into the role and it has been demonstrated that reporting advanced practitioner radiographers contribute to service delivery beyond image interpretation ⁽⁹⁾. Whilst established in ultrasound, plain film, CT and MRI ⁽¹⁰⁾, reporting roles are also expanding into a range of areas with examples including reporting of DXA scans or providing emergency ultrasound with reporting in the emergency department setting ⁽¹¹⁾. This strong base in role development, historically taking on tasks previously only associated with radiologists ⁽¹²⁾, clearly demonstrates the radiography profession's capability and capacity for advancing its practice. However, ACCP does not need to contain reporting as a component. An example of consultant practice within radiotherapy demonstrates the capacity for autonomous practice with a role encompassing the vetting and accepting of patient referrals, consenting patients for treatment, approving and prescribing treatment and prescribing a range of specific medicines ⁽¹³⁾. Whilst not evidenced in the literature, radiographers are also known to undertake advanced roles such as leading MRI cardiac stress perfusion lists, supervising complex gastro-intestinal MRI examinations and undertaking vascular access clinics. Hence, acknowledging that reporting, whilst able to be a facet of ACCP, isn't essential to the definition of advanced and consultant practice opens up the possibility of a range of roles within CDHs that could have radiographers at their core.

The ACCP radiographer role within a Community Diagnostic Hub (CDH)

The NHS Long Term Plan has committed to ensuring every patient will have the right to be offered digital-first primary care by 2023-24 ⁽²⁾ and even before the Covid-19 pandemic there has been a steady increase in the number of telemedicine consultations ⁽¹⁴⁾. If this trend is set to continue, the outcome could be that the first healthcare professional a patient sees face to face is the radiographer when they are referred for imaging. This first interaction is

deemed critical as it has the potential to shape the attitudes and behaviours needed to foster a strong patient-provider relationship ⁽¹⁵⁾. This presents an ideal opportunity for the radiography profession to develop a role enabling an ACCP radiographer to oversee the diagnostic process in its entirety. Utilising key skills such as history taking and clinical assessment the ACCP radiographer would be able to be more directive with their decision-making rationale, assisting them in referring patients for appropriate treatment or for specialist review post diagnosis. This practitioner would, therefore, be in a position to have a greater impact on the patient pathway.

A vision for a number of different ACCP roles will now be proposed that could be developed within the context of a CDH. The first two roles are pathway-specific and demonstrate practically how an ACCP radiographer could utilise an advanced skill set to contribute to the decision-making processes around diagnostic testing. Table 2 gives suggestions for how aspects of these roles could contribute to, and be optimised for, the achievement of an advanced level of practice meeting each of the four core pillars. In every example, the ACCP radiographer would be using their specialised knowledge base to provide expert opinion and leadership within a multidisciplinary team setting.

Capability Pillar	Respiratory Lead	Modality Lead	Cardiac Lead	Learning Disability Lead
Clinical	<p>Image interpretation - Chest</p> <p>History taking and patient Assessment</p> <p>Acting as non-medical referrer where appropriate</p> <p>Referral of patients to appropriate Multidisciplinary Team (MDT)</p> <p>Advanced communication skills for delivery and explanation of diagnostic tests plus discussion with patient re: further testing/referral</p>	<p>Able to undertake advanced scanning techniques</p> <p>Potentially undertake reporting within a specialist area</p> <p>Provide immediate and onsite expert support and opinion for both referrers and the wider diagnostic team</p> <p>Able to support and advise on complex scanning examinations and procedures across a range of sites via virtual cockpit technology</p>	<p>Radiographer-led stress perfusion lists</p> <p>History taking and patient Assessment</p> <p>Provide expert opinion and operational advice for all cardiac imaging</p> <p>Echocardiogram (ECG) interpretation and analysis</p> <p>Advanced Trauma Life Support (ATLS) trained</p> <p>Independent prescribing to enable radiographer-led cardiac CT service</p>	<p>Meeting complex needs of LDA</p> <p>Participate in the triage of LDA for imaging</p> <p>Highly knowledgeable around competence, consent and safeguarding of vulnerable adults.</p>
Education	<ul style="list-style-type: none"> • Be able to critically assess and maintain own learning needs to ensure ongoing professional development through all four key pillars. • Ability to lead and support the wider team to use work based and interprofessional learning opportunities to build capacity and capability of service provision both now and in the future. • Empower individuals through education and improved health literacy to participate in decisions around their care to maximise their health and wellbeing. • Contribute to and foster an organisation approach to learning to inspire staff and the wider team 			
Leadership	<ul style="list-style-type: none"> • Take on overall responsibility for pathway provision and continually develop practice in response to changing population health needs • Use advanced clinical expertise to provide consultancy across professional and service boundaries • Demonstrate team leadership, and resilience through the management of complex situations • Lead and develop effective team relationships to enable collaborate and productive working • Demonstrate a person-centred approach that models the values of the organisation and leads to service development • Provide support, mentorship and supervision 			
Research	<ul style="list-style-type: none"> • Ensure governance system and documentation processes are robust and critical review is undertaken consistently • Ensure clinical practice is consistently evaluated through audit processes for all levels of staff and when appropriate, act on these findings to ensure the patient received a safe standard of care • Engage in research activity, that aids the development of evidence-based strategies and guidelines to enhance quality, safety, productivity and value for money 			

Table 2: Examples of ACCP roles within the 4 pillar framework

Example 1 – Musculoskeletal Lead Radiographer

The demand within primary care for musculoskeletal (MSK) consultations is rising and there is emerging evidence to suggest that direct access to physiotherapy and other healthcare professionals may offer appropriate care options for patients suffering from MSK pain ⁽¹⁶⁾. It is also been felt for some time that a global increase in obesity, alongside an ageing population, will result in further increased demand for MSK care ⁽¹⁷⁾. Furthermore, MSK conditions, such as low back pain, are often long-term and characterised by relapses and recurrences ⁽¹⁸⁾. The intention of the lead ACCP role described here would be to provide clinical expertise and leadership within a defined scope of practice in response to increasing demand for MSK consultation and diagnostic testing.

Initially, the patient would self-refer to an ACCP radiographer led clinic. An online or video consultation would seek to identify any red flags or underlying health conditions. If present, the ACCP radiographer would signpost the patient back to their GP or refer them to an acute provider as appropriate. Suitable patients without such red flags or other contraindications would then be offered a face-to-face appointment with the ACCP radiographer who would take a medical history to establish and provide a narrative around the patient's condition alongside a physical examination of the anatomical area. Clinical reasoning and decision making by the ACCP radiographer at this juncture would identify and provide a set of provisional diagnoses that could be further explored through imaging or other diagnostic tests which the ACCP radiographer would request autonomously.

The proposed plan to equip CDHs with a full complement of diagnostic imaging modalities and other test tools would permit the ACCP radiographer to have a far greater choice of

diagnostic examinations to choose from. With the appropriate capacity and infrastructure, there is potential for same day testing to take place and, when combined with a hot reporting service led by the ACCP radiographer, this would enable a rapid diagnosis for the patient. This type of 'single day, one practitioner' pathway where there is repeated interaction between the patient and the ACCP radiographer allows the rapport and relationship to develop and continuity of care to be extended. In terms of the test results, with appropriate training and support, the ACCP radiographer is well placed to deliver these directly to the patient as well as discuss the various treatment/referral options available. Figure 1. Gives an example of what this particular pathway could look like together with the level of input the ACCP radiographer would have when operating within this type of role;

Figure 1. A proposed ACCP role embedded within an MSK pathway



In order to enable successful implementation of this type of role, the ACCP radiographer would need to demonstrate the appropriate knowledge, skills and capabilities to operate at an advanced practice level in order to make appropriate clinical decisions that have a direct impact on the patient care pathway ⁽¹⁹⁾.

From a clinical point of view, the MSK ACCP radiographer would be established and qualified in primary image reporting and potentially may have additional post graduate reporting qualifications in MRI and/or CT. They would be required to demonstrate excellent consultation and enhanced communication skills as well as having a proven ability to be proficient in history taking and physical clinical examination. In order to ensure a safe and robust decision-making rationale, they would need to evidence a strong understanding and knowledge base around a range of both chronic and acute clinical conditions, treatment options, discharge and referral processes.

There are several advantages to this particular ACCP role for both the patient and the profession which are outlined below;

- Continuity of care for the patient and associated higher patient satisfaction rates due to the process involving contact with one single lead practitioner
- Same day diagnosis therefore reducing anxiety for patient and enabling rapid initiation of treatment.
- Same day / single visit – cost effective for both service delivery and for the patient as limits the need to travel to different sites and reduces several different appointment days/times.
- Improved quality – the ACCP radiographer overseeing the entire diagnostic pathway would ensure standards and appropriate requesting of imaging examinations consistently remain high.
- Professional development – the role would see radiographers increasing and widening their skill set enabling them to align to the same advanced practice and consultant frameworks that other healthcare practitioners (HCPs) work towards at this level.
- Increased access to advanced practice funding streams – education and training to undertake more generic advanced practice skills aligns to the majority of the

occupational standards within the level 7 Advanced Clinical Practice apprenticeship therefore meaning a greater chance of obtaining funding via the organisational apprenticeship levy.

- Professional awareness – the role would enable there to be greater exposure and awareness of the profession due to the interactive referral processes to other healthcare professionals within the patient pathway.

There is potential for numerous other adjuncts to the pathway to be incorporated that would enable the ACCP radiographer to extend their input and provide a truly holistic care package to the patient. An example of this includes independent prescribing allowing the radiographer to offer medication, both pre and post diagnosis, as a treatment option instead of having to refer patients to another practitioner or medical doctor to authorise this. Another potential avenue is via radiographer-led joint injection clinics which could again build on the rapport already established between the ACCP radiographer and the patient, also offering continuity of care throughout the entire pathway from diagnosis to treatment.

Example 2 – Fracture Liaison Lead Radiographer

Dual Energy X-ray Absorptiometry (DXA) measures bone density and is used to diagnose osteoporosis and identify patients at risk of fractures. As the population ages the incident of osteoporosis and fragility fractures is likely to rise ⁽²⁰⁾. Early identification and prevention of fragility fractures could reduce costs to the NHS and reduce the life changing impact on individuals ⁽²¹⁾. Importantly, identification of fragility fractures can help to identify those at a higher risk of hip fractures and this could provide an opportunity to reduce the associated morbidity and mortality ⁽²²⁾ to improve the lives of those living with osteoporosis.

DXA and Fracture Liaison Services (FLS) could be well suited to being provided in a CDH, co-located with other support services, to allow for the same day / single visit approach,

reducing the requirement for multiple visits to an acute hospital site. Radiographers are integral to the multi-disciplinary team (MDT) providing DXA and Fracture liaison services (FLS) already and are uniquely positioned to extend their role within FLS and develop advanced and consultant practice. As an imaging specialist in DXA their background provides valuable knowledge and understanding to underpin additional training to extend practice to reporting of DXA scans. As previously discussed, in and of itself, reporting may not be sufficient to constitute advanced practice but with further development and training radiographers can develop roles within FLS alongside other members of the MDT, performing patient assessment and reviews in outpatient (in person or virtual) environments and managing the entire patient pathway including onward referral to other services and providing advice to patients taking opportunities to 'make every contact count' ⁽²³⁾, including the provision of lifestyle advice. An example of this may include highlighting the increased risk factors for smokers and providing smoking cessation guidance and support or providing guidance on the benefits of increased physical activity. This could potentially expand to social prescribing thereby taking a more holistic approach to an individual's health ^(24, 25). Such a role could encompass advising patients of further treatment options and in the future include recommending amendments to drug regimens and independent prescription of medication to support management of a patient's condition. This, however, would be subject to a change in legislation. Currently diagnostic radiographers are currently not able to independently prescribe medication ^(26, 27).

Previous research ⁽²⁸⁾ has indicated that compliance with oral medication regimes in post-operative hip fracture patients has been found to be poor. The development of ACCP radiographer role within fracture liaison services could be expanded to include patient education, providing support and advice as part of the MDT with a view to improving compliance with recommended treatment and drug regimens and patient outcomes. Furthermore, the delivery of education in locations close to patients' homes or virtually may

have increased benefits of improving attendance and reducing inequalities in accessing services.

Example 3 – Learning Disability Lead

Rather than being expert in a particular aspect of health, another opportunity for ACCP is related to optimising pathways for patient groups with specific needs; such a role may encompass either the CDH, or multiple CDHs, and hospital based imaging services. This next example is related to the provision of services for people with learning disabilities.

There is a link between having a learning disability and having a long-term physical condition⁽²⁹⁾ together with reduced healthcare outcomes and premature death when compared with the general population^(30, 31). This is in part due to difficulties in accessing health care and health screening⁽²⁹⁻³¹⁾. Inequity in health outcomes has been further exacerbated by the Covid-19 pandemic⁽³²⁾. Recommendations for improving care include proactive health screening⁽²⁹⁻³¹⁾ of which imaging may play a part, and bespoke training for all health care practitioners both in terms of general understanding of, and respect for, people with learning disabilities, but also for sharing best practice⁽²⁹⁻³¹⁾. As part of this there is a call for co-ordinated care⁽²⁹⁻³¹⁾ which has led to the introduction of specialist Learning Disability Adult (LDA) teams and the commissioning of co-ordinated care⁽³³⁾.

An ACCP radiographer, specialist in supporting people with learning disabilities through imaging, could become part of that multidisciplinary team contributing to the triage of LDA, determining whether they are suitable for imaging at the community diagnostic centre or whether they require day case admission to the hospital for sedation or anaesthesia. The ACCP radiographer would then take responsibility for the imaging of LDA at the diagnostic centre where that has been deemed appropriate. So it can be seen that this role, in conjunction with diagnostic community based imaging, is twofold. It has the potential to

greatly enhance service provision for the LDA community who would get to know the ACCP radiographer in the way they know the LDA lead nurses providing continuity of care but also relieving logistical pressures on hospital based services. This type of role could also be expanded to other cohorts of patients with particular needs.

As previously mentioned, Table 2 outlines ideas of how these ACCP roles could meet the 4 pillar ACP framework. It should be noted that the capabilities listed are not meant to be an exhaustive list and merely represent suggestions put forward by authors for consideration and to aid transformative type thinking. An additional factor is that such roles may be of value in terms of aiding recovery for diagnostic imaging services as they emerge from the Covid-19 pandemic. Features of these roles, such as single visit / single practitioner, introduces efficiencies that should help reduce waiting lists that may have built up due to the Covid-19 pandemic; and it may be that this could be a further driver for the implementation of such roles.

Conclusion

The introduction of CDHs presents a real opportunity for radiographers to improve access to imaging for patients whilst simultaneously contributing to the development of the profession in a variety of ways. This article has sought to describe a range of ideas in relation to ACCP that provide opportunities for radiographers to add real value to the provision of diagnostic pathways and / or to utilise their skills and experience in optimising care for individuals with particular needs. The roles outlined are not definitive and are not written to be a gold standard template. Instead it is intended they may be used to stimulate and support discussion for those Imaging Services involved in the creation of the CDHs; it is hoped that that radiographers play an active role in the creation and implementation of these centres so that the profession's expertise can be fully utilised.

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