UCLPartners

Community Diagnostic Hubs

Insights from a call for evidence and exemplars

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Part 1: Introduction

To support NHS England London's work to inform the local establishment of Community Diagnostic Hubs (CDHs) UCLPartners carried out a rapid, non-systematic call for evidence and exemplars to identify insights from those involved in the delivery of community based diagnostic facilities.

A survey was designed, promoted through a social media campaign and known networks,[1] to gather insights into the following areas:

- Clinical pathways and diagnostic services covered
- Workforce skill mix, employment models, and staff development and training
- Contractual arrangements, performance monitoring and booking/data sharing arrangements
- Health inequalities
- Perspectives on what makes for a high-quality community diagnostic facility.

The news item on the UCLPartners website promoting the work and survey received 411 views (357 unique views i.e. number of individuals).

Eight responses to the survey were received from individuals representing:

- NHS community diagnostic services
- Privately-operated community diagnostic facilities
- Industry partners providing diagnostic equipment, infrastructure, and laboratory services.

Eight interviews were conducted with a total of 11 individuals representing these groups. Two groups were carrying out related research, and three of the interviewees had completed the survey prior to interview. The interviews were semi-structured, exploring the broad areas covered in the survey, in addition to any further opportunities to innovate when designing and delivering CDHs.

The five key themes arising from the survey and interviews are summarised in Part 2. Insights from the London Vaccine Programme, evaluation of Multidisciplinary Diagnostic Centres and a literature review commissioned by UCLPartners on equity of access to services are also included in the write up within.

Part 3 of the report highlights three priorities identified through the synthesis of findings which, because they are complex and multi-faceted but also deemed critical to delivery of the CDH vision, may require further consideration within the planning for CDHs in London.

Part 2: Key themes from interviews and survey responses

The main insights gathered from the interviews and survey responses are included in the sections below. Based on these insights, and acknowledging the limited scope of the review, there are five questions that may help guide local organisations in their development of CDHs:

1. How is the CDH being **co-created** with, and designed to meet the longer-term needs of, the wider health economy and local population?
2. How will the CDH **take advantage of innovations** to enhance the user experience, improve staff productivity and ensure service interoperability?
3. How will the CDH ensure the recruitment and ongoing development of a **strong and stable workforce?**
4. How will the CDH ensure equity in terms of access, experience and outcomes, and proactively seek to **reduce inequalities** amongst the most under-served sections of the community?
5. What mechanisms will be in place to provide assurance of a high-quality and well-coordinated **patient experience**, from referral to completion?

1. Take a long-term, strategic and partnership approach

Several interviewees emphasised the need to retain fidelity to the vision set out in the Richards' Review[2] by taking a long-term and strategic approach to the design and delivery of CDHs, across a 10-20 year, not a 3-5 year, timescale. Interviewees commented on the tendency up to this point for additional diagnostic planning to be done when the service is "on fire", rapidly commissioning (usually) mobile units in hospital grounds to tackle discreet waiting lists. Instead, there is an opportunity here to consider patient needs from a pathway redesign perspective, and to proactively take into account wider health economy ambitions, not simply individual service requirements. One interviewee commented that a wider-ranging approach, akin to that taken in *Shaping a Healthier Future in NW London*[3] for example, could be adopted.

Case example: Turner Diagnostic Centre, Colchester

Through a partnership between Alliance Medical and East Suffolk and North Essex NHS Foundation Trust, a multi-modality diagnostic facility (containing MRI, PET-CT and Nuclear Medicine) was established. The establishment of the centre was seen as an opportunity to simultaneously address patient experience, patient flow and staff experience, rather than just "putting in another scanner". A broad stakeholder engagement exercise was conducted (involving partners from primary care, the local authority, planning department) with the facility incorporating additional spaces and services including a radiology reporting space, meeting rooms, SIM lab, bike racks and staff rest areas as a result of the engagement.[4]

Taking a more integrated approach could also manifest itself in building closer links to local communities and playing a role in preventative health services. Feedback from a current NHS community spirometry service identified the potential to widen its current offer once the patient has

been engaged, to include smoking cessation assessments, pulmonary rehabilitation or improvements in inhaler technique. Other interviewees spoke of the opportunity to see the patient *"as a whole",* combining, for example additional screening services within CDHs, such as bowel screening or diabetic eye checks.

Case example: Thorpe Park Clinic, Leeds

The Thorpe Park Clinic in West Yorkshire, operated by the Living Care Group, is partnering with local land agents to co-create nearby walking and cycling routes and green spaces, as well as organising local cycling events as a wider offer to the community. The Group is particularly interested in playing a greater role in preventative health, and could imagine offering services that move into other areas of patient education e.g. healthy eating advice.[5]

From a financial perspective, many interviewees commented that a tariff-only funding envelope would not be sufficient given the investment required for, say, CT scanners (unless there was capital offset), making a private patient offering "inevitable". Wariness of private sector involvement still exists, with common perceptions that they only take on low-complexity cases, for example. However, there are examples of centres developed through mutually-beneficial partnerships (see case example below).

Case example: Community Diagnostic Centre, Taunton

Somerset NHS Foundation Trust established a 10 year partnership with Rutherford Diagnostics to increase its diagnostic capacity, away from the acute site. The final design includes a wide range of diagnostic equipment (MRI, ultrasound, Echo, plain film, spirometry etc) as well as private consulting space, pre-operative assessment, and resus facility. The specification took account of wider system partners' requirements and activity planning, including from Yeovil District Hospital and Primary Care. A partnership approach is evident in: joint design workstreams (covering clinical strategy and governance, commercial and financial model, and legal and contracting); a shared staffing model (including a commitment for the private provider to source non-NHS staff); and collaborative decision-making (with trust staff involved in site selection, centre design, equipment specification and staffing).[6]

2. Maximise interoperability and innovation

Interviewees highlighted several opportunities to innovate in the design and delivery of CDHs. Automation and Artificial Intelligence is one such example, to help free up time for clinicians to provide more personalised care by reducing the burdens of routine processes. *InHealth Ventures* – the innovation arm of *InHealth* – invests in and works with class-leading technology and service providers, that have the potential to transform cost, quality and access to care. One example, *Kheiron* (Winner, AI in Health and Care Award), is rolling out *MIA - Mammography Intelligent Assessment* across multiple UK sites to retrospectively assess the image quality of mammograms to improve standardisation.[7]

Interoperability is another key consideration that was highlighted, to ensure that images and other resources can be shared using cloud-based technology across all of the professionals involved in delivery of the patient's care. For example, *Phillips* operates a Radiology Operations Command Centre which enables clinical staff to connect across multiple locations to see scans simultaneously, and offers training opportunities and access to clinical experts to provide remote support to teams.

Such an approach also enables improved management of complex cases, and addresses any patient concerns around quality and skill level at the CDH. Feedback from the clinical lead of an existing NHS-operated community diagnostic service noted that they still do not have the software to connect up their primary and community-based systems.

Case example: Radiology reporting hub in Cheshire and Merseyside

To address the challenge of patients arriving at clinics without images being available, a new regional network model across Cheshire and Merseyside commenced in 2015 which involved connecting multiple hospital-based radiology archives with a single virtual data centre. Consolidating image sharing and reporting on a single hub has enhanced the delivery of integrated radiology services and introduced significant workload efficiencies. This use of integrated digital technologies had removed the logistical load of moving patients' images between sites in response to patient flows.[8]

3. Support workforce development and deployment

Concerns were expressed in relation to staffing CDHs. Some interviewees highlighted potential concerns about NHS staff being 'poached' by independent sector providers to staff CDHs. Although independent sector providers cannot offer NHS Terms and Conditions, they are perceived as being able to offer greater flexibility and a lower intensity of work. One interviewee from a specialised NHS community service felt there was a "ceiling on learning" for staff in their service due to the repetitive nature of tasks and limited professional development.

Some providers adopt employment passports to enable staff to work across multiple sites, thus making the best use of a specialist workforce whilst offering variety for staff. Rotation of staff between acute sites and CDHs was recommended to support knowledge transfer, training and wider adoption of innovation, as well as securing "downtime" for staff from acute pressures. Establishing traineeships and apprenticeships (for example for HCAs or radiographers) was suggested as a mechanism to support a sustainable workforce.

Insights from the survey: Workforce

Survey respondents identified a **wide range of staff** employed in existing community diagnostic facilities, including: Radiologists, Radiographers, GPwSIs, Advanced Nurse Practitioners, Operating Department Practitioners, RGNs, Healthcare Assistants, Students, Administrative and Reception Staff. One international provider employs 1500 clinical specialists (including 500 radiographers) out of a total workforce of 2,500, with a staffing model that sees all staff working at the top of their licence.

Some providers have **large annual intakes of staff** through apprenticeship and graduate programmes as well as through overseas recruitment to support the sustainability of the workforce, supplemented by flexible use of bank and agency staff to meet fluctuations in demand. Example employment models include use of practicing privileges, honorary contracts, full-time contracts, passporting across organisations (for example, in endoscopy and urology), and student rotation.

Training schemes exist through various arrangements, such as in-house education programmes, university placements and external training programmes. One provider offers Leadership

Development Programmes, Apprenticeship Programmes across clinical and management roles, Graduate Training Programmes for radiographers, and ongoing certificated CPD (both to independently contracted and NHS staff).

4. Enhance the user experience

The operator of an existing community diagnostic facility in London places a strong emphasis on establishing a personal relationship with each patient through its Patient Referral Centre. Communication is established through several mechanisms at various points from referral:

> *"All patient appointments are booked via our patient referral centre (PRC). The PRC makes contact with each patient via text message (or phone/mail if preferred) once a referral is received. The patient has the option of making their appointment via our bespoke patient booking portal or talking directly to a booking agent. We take particular care to offer each patient a choice of appointments before making sure they are comfortable with the procedure they are attending for as well as the location and transport options to get there. Reminders are sent to the patient at 72, 48 and 24 hours before the appointment. This care in booking appointments is reflected in very low DNA rates of 3-4% and a high patient satisfaction score of 98%."*
>
> - Survey response

Based on learning identified in the piloting of Multi-disciplinary Diagnostic Centres, there may be potential in adopting Patient Navigators to provide more coordinated patient care and remove barriers to patients accessing services:

Case example: Patient Navigators in Multi-disciplinary Diagnostic Centres (MDCs)

An evaluation of five sites piloting the MDC model for patients with non-specific but concerning symptoms (NSCS) has identified the value of a Patient Navigator to provide active coordination of care that removes barriers to access. The Patient Navigator coordinates all elements of the pathway to ensure a timely diagnosis - booking the diagnostic tests and clinic appointments for the patient, and liaising with the patient and the clinicians involved to ensure that the patient understands what will happen at each stage of the pathway.[9]

From a design perspective, community facilities have included individual (unisex) changing rooms to help improve the patient experience. This provides each patient with a private space which can be used for multiple purposes (eg: patient changing, canulation, showing patient videos) alongside reducing infection risk and facilitating rapid patient flow. In one example, Healthcare Assistants manage the patients during this time to ensure patients feel looked after and attended to before and after their scan. In addition, the provision of consulting rooms can provide space for additional activities, such as, private practice, registrar training or a quiet working space away from the hospital site (as well as providing supplementary income).

With regards to the types of key information that facilities collect to monitor ongoing performance, the survey and interview process mainly captured operational service data. An example is provided in the box below. There would be an opportunity to collect additional information that could give further insights into the service experience from a user perspective.

Case example: Istituto Andrea Cesalpino, Italy

Alliance Medical has created more than 35 Community Diagnostic Centres in Italy. These Hubs are multi-modality and many are co-located with community based clinical services. One such centre is the Istituto Andrea Cesalpino in Cortona, Tuscany (also serving Umbria, Lazio, Marche), providing a range of diagnostic services (MRI, CT, X-Ray, Echo, Dexa, Mammography and Phlebotomy). KPIs that are monitored include:

- **Call centre performance**: Proportion of abandoned calls, calls handled per hour, call length, ring-time average length
- **Service operation**: Stoppage hours per machine, total working hours per machine
- **Customer satisfaction**: Time from booking to execution, time from arrival to execution, time from execution to reporting, satisfaction scores (quality of service, booking procedure, waiting room comfort, clinician behaviour, reception and support staff behaviour, confidentiality).[10]

5. Identify opportunities to reduce health inequalities

An emerging insight about the legacy of the Vaccine Programme in London is how critical it is to design services that meet the needs of local communities and improve equity of access to those groups so often under-served. More than one interviewee identified the opportunity that informatics could bring to the development of CDHs, for example by analysing the demographic profile of those currently on waiting lists for certain diagnostic tests (against what would be expected), and targeting plans accordingly. Active monitoring of patient access to CDH services alongside other diagnostic services, rather than just within CDHs, will be important to mitigate widening inequalities and to target action to specific patient groups as appropriate.

Interviewees also highlighted a number of practical considerations that need to be taken into account when developing CDHs. Choice of location is a critical issue, ensuring proximity to public transport, good parking, and a degree of "localness" – but this needs to be balanced with other factors, such as decontamination requirements. Opening hours is another factor, ensuring that sections of the population are not unduly penalised by having to take time out of the working day to attend. An example facility is currently open 14 hours per day, 7 days per week, 363 days per year.

One independent provider has developed units which have the flexibility of a mobile unit (with a retractable chassis that allows for manoeuvring within tight spaces) with the accessibility benefits of a relocatable unit, with ground-level entrances for patients with accessibility requirements or for bringing patients in on beds. Another provider has sought to make all of its patient information materials available in a range of languages, has language line interpreters available in its Patient Referral Centre, and actively engages with local third sector organisations (such as Age Concern) to help meet the needs of its population.

Case example: Synthesis of access barriers by the Centre for Healthcare Innovation Research (CHIR)

The CHIR completed a scoping exercise – commissioned by UCLPartners – to map and synthesise the main access barriers to healthcare for six groups: ethnic minority groups, homeless population, traveller communities, individuals with learning disabilities, individuals with autism and individuals with severe mental illnesses.

All six of the main barriers identified – medical perceptions, language and communications barriers, cultural barriers and stigma, geographical barriers and lack of support, and legal barriers

– should be considered in the design and implementation of healthcare services to enable equity of access.

Recommendations from the synthesis included the need to account for overlapping, intersecting and converging inequalities. Interventions to tackle inequalities in health should focus on how ethnicity, gender, sexuality, disability, socio-economic and legal status often work together and interact with each other to influence individuals' health status. For instance, disability may aggravate one's vulnerability and ability to access care, and this ability may be even more greatly reduced by gender or ethnicity[11].

Part 3: Recommended priorities for further consideration

Based on the synthesis of findings from the survey, interviews and external insights, it is recommended that the following three priorities – health inequalities, patient experience and workforce - be further explored to inform the planning for CDHs in London, for Londoners. To show the breadth and complexity of these priorities, some aspects for consideration are highlighted.

Across all priorities, there is a need to consider how data capture and analysis is embedded as an integral part of the set-up of CDHs to enable decision making, continual improvement and evaluation. Understanding equity of patient access, experience and outcomes, alongside staff experiences is likely to significantly enhance the development of CDHs, beyond the more commonly used volume and activity metrics.

1. Health inequalities

- Achieving equity of access, experience and outcomes, which includes, but is not limited to CDH location
- Adopting principles within *The Health Inequalities Improvement Planning Matrix to* narrow, rather than just avoid exacerbating inequalities (eg: co-production, health equity audits, culturally competent communications, multi-agency working including the Voluntary sector)
- Setting up data flows to actively monitor patient access to both CDHs and other NHS diagnostic services.

2. Patient experience

- Co-design of the entire patient experience journey to determine how CDHs can become a pathway of choice for patients, as an alternative to hospital or not attending, and understanding the factors that influence patient decision making
- Making 'every contact count' within the service offer, and maximising the utility of a visit through co-location of multiple diagnostic services alongside, for example, health promotion and screening.

3. Workforce

- Defining the value proposition for staff of working in CDHs, which addresses key concerns, such as rotation, training etc
- Utilising innovation to improve staff experience – including increasing productivity and efficiency (e.g. through automating tasks or changing the skill mix of who in the team does different activities), virtual team working across sites etc.
- Drawing learning from other programmes regarding the role of, for example, volunteers and patient navigators.

[1] https://uclpartners.com/work/community-diagnostic-hubs/
[2] https://www.england.nhs.uk/wp-content/uploads/2020/11/diagnostics-recovery-and-renewal-independent-review-of-diagnostic-services-for-nhs-england-2.pdf

[3] https://www.england.nhs.uk/london/2015/11/09/healthier-future/
[4] Taken from interview and case study material provided
[5] Taken from interview.
[6] Taken from interview and case study material provided.
[7] https://www.kheironmed.com/meet-mia
[8]https://images.philips.com/is/content/PhilipsConsumer/Campaigns/CA20162504_Philips_Newscenter/CA20162504_Philips_Newscenter-en_GB-AAA-5228_uk_healthcare_inequalities_research_report.pdf
[9] https://www.cancerresearchuk.org/sites/default/files/ace_wave_2_qualitative_evaluation_full_report.pdf
[10] Taken from interview and case study material provided.
[11] Report available on request from UCLPartners