Electronic Health Record Solution for Sexual Health

North West London Integrated Care System

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Related Documents

These documents provide additional information and are specifically referenced within this document.

| Ref | Doc Reference Number | Title | Version |
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# About Us

NHS North West London (legally known as NHS North West London Integrated Care Board, ICB) is responsible for contracting healthcare services locally and the oversight of the local NHS budget. It has extensive role in primary, secondary and community care, some of which are sole responsibilities, others in a joint or shared function with NHS England.

We cover London boroughs of Brent, Ealing, Harrow, Hammersmith & Fulham, Hillingdon, Hounslow, Westminster, and the Royal Borough of Kensington and Chelsea.

Our aim is to deliver the four core national objectives of ICSs:​​​​​​

* Improve outcomes in population health and health care
* Prevent ill health and tackle inequalities in outcomes, experience and access
* Enhance productivity and value for money
* Support broader economic and social development

We have far reaching and ambitious plans and a clear focus on where we will start.

We have a relentless focus on tackling health inequalities and have developed a joint NW London strategy, including a plan for addressing digital exclusion.

For more information please visit <https://www.nwlondonicb.nhs.uk/>

This tender is being managed by NHS North West London on behalf of the three main providers of sexual health services in the sector: Chelsea and Westminster Hospital NHS Foundation Trust, Imperial College Healthcare NHS Foundation Trust and London North West University Healthcare NHS Trust.

**Chelsea and Westminster Hospital NHS Foundation Trust**

CWFT is one of the top ranked and top performing hospital trusts in the UK. It employs almost 7,000 staff over our two main hospital sites, Chelsea and Westminster Hospital and West Middlesex University Hospital, and across multiple community-based clinics within North West London.

We are a world-leading provider of award winning sexual health services across London, including Level 2 and 3 Sexual Health services.

* Advice and support for a range of sexual health related issues
* Rapid asymptomatic screening for sexually transmitted infections (STIs) including HIV
* Clinical evaluation and STI testing in individuals with genital or other symptoms suggestive of an STI
* Diagnosis, treatment and management of STIs
* HIV post-exposure prophylaxis (PEP) for HIV and associated clinical care Pre-exposure prophylaxis (PrEP) for HIV and associated clinical care
* Vaccination programmes – such as Hepatitis A,B and human papillomavirus (HPV)
* A full range of contraceptive services including provision of emergency contraception and long-acting reversible contraception (LARC)

In addition to the above services, we provide a number of specialist services:

* Clinical care for people living with HIV
* TransPlus gender identity clinic
* People with learning difficulties and disabilities
* Psychosexual counselling and therapy
* Difficulties related to sexualised drug-use (“chem-sex”)
* High Resolution anoscopy (HRA)

We also provide and support a number of outreach community services, for the following groups:

* Black and ethnic minority communities
* Men who have sex with men including those who attend sex on premises venues
* Commercial sex workers
* Transgender and non-binary people
* Teenagers/young persons aged under 25
* Socially excluded or those who use Supporting People Services

Our HIV and sexual health services have been rated “Outstanding” by the Care Quality Commission (CQC). Our service at 56 Dean St has achieved global recognition for its innovative approach to HIV prevention and has received multiple awards. Our transgender services are also award-winning and have received acknowledgements for inclusivity & diversity, as well as a Nursing Times Award for ‘Enhancing Patient Dignity’

We are proud to support London’s participation in the Fast Track Cities initiative and are committed to the aim of ending new HIV infections in the capital by 2030.

**Imperial College Healthcare NHS Trust**

Imperial College Healthcare NHS Trust provides acute and specialist healthcare for over one million people every year. We particularly serve the local communities in the eight boroughs that form the North West London Integrated Care System. Formed in 2007, we are one of the largest NHS trusts in the country, with more than 14,500 staff.

Our five hospitals in central and west London – [Charing Cross](https://gbr01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.imperial.nhs.uk%2Four-locations%2Fcharing-cross-hospital&data=05%7C01%7Cnadine.silverside%40nhs.net%7Cfcb38aeee1ad4c85c04b08daf195ca14%7C37c354b285b047f5b22207b48d774ee3%7C0%7C0%7C638087922876245815%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=GDmIivKFYXQjYP3LPgNlpP1nU1IjLSOyXHvImE%2FxPnA%3D&reserved=0), [Hammersmith](https://gbr01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.imperial.nhs.uk%2Four-locations%2Fhammersmith-hospital&data=05%7C01%7Cnadine.silverside%40nhs.net%7Cfcb38aeee1ad4c85c04b08daf195ca14%7C37c354b285b047f5b22207b48d774ee3%7C0%7C0%7C638087922876245815%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=b9e4axIVbJAuhkeVPaTwFfGOrMb1IG9HSakp0p8LP8A%3D&reserved=0), [Queen Charlotte’s & Chelsea](https://gbr01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.imperial.nhs.uk%2Four-locations%2Fqueen-charlottes-and-chelsea-hospital&data=05%7C01%7Cnadine.silverside%40nhs.net%7Cfcb38aeee1ad4c85c04b08daf195ca14%7C37c354b285b047f5b22207b48d774ee3%7C0%7C0%7C638087922876245815%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=cWdDhFxrImmuOZzzRMZ4Dhg4wNgv26ugRQ60wmC%2BIt0%3D&reserved=0), [St Mary’s](https://gbr01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.imperial.nhs.uk%2Four-locations%2Fst-marys-hospital&data=05%7C01%7Cnadine.silverside%40nhs.net%7Cfcb38aeee1ad4c85c04b08daf195ca14%7C37c354b285b047f5b22207b48d774ee3%7C0%7C0%7C638087922876245815%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=prfOrW7tYd6k%2FsBvz1tIF0RMKGMCOpxZv75DL3gWEcw%3D&reserved=0) and [The Western Eye](https://gbr01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.imperial.nhs.uk%2Four-locations%2Fwestern-eye-hospital&data=05%7C01%7Cnadine.silverside%40nhs.net%7Cfcb38aeee1ad4c85c04b08daf195ca14%7C37c354b285b047f5b22207b48d774ee3%7C0%7C0%7C638087922876245815%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=RW7xf97T5iy6e6yF21Xds28lBwWTIzkRlMuZvRnmVnQ%3D&reserved=0) – have a long track record in research and education, influencing care and treatment nationally and worldwide. We are developing a growing range of integrated and digital care services and offer [private healthcare](https://www.imperial.nhs.uk/about-us/what-we-do/imperial-private-healthcare) in dedicated facilities on all our sites, including at the Lindo Wing at St Mary’s Hospital.

Our combined CQC inspection rating (2019) is good.

**Our Organisation Strategy**

Our vision is: Better health, for life

To be achieved by the delivery of our three strategic goals:



To help create a high quality integrated care system with the population of northwest London



To develop a sustainable portfolio of outstanding services



To build learning, improvement and innovation into everything we do

Rooted in our four core values:

**Kind Aspirational Collaborative Expert**

Sexual health service at Imperial College NHS Trust is based in Jefferiss at St Mary’s hospital at central London Paddington. Jefferiss provides comprehensive sexual health services and HIV management care.

We provide specialist sexual health, contraception, HIV care and HTLV care.

We provide the following services:

* HIV care including an emergency service
* Dedicated HIV in-patient beds in a 19-bedded purpose built ward based at Chelsea and Westminster Hospital
* Comprehensive sexual health screening for sexually transmitted infections (STIs) including HIV
* Pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP) for HIV prevention
* Safer sex education and support/counselling
* Hepatitis A, B, C, HPV and Monkeypox vaccination
* All methods of contraception, including emergency contraception
* Specialist clinics particularly focused on complex and difficult to treat infections and male pelvic pain
* A vaginal clinic providing support to women with complex vaginal infections
* Sexual function services for those experiencing difficulties with sex
* Specialist clinics for gay, bisexual, and other men who have sex with men (GBMSM) and those identifying as transgender and other LGBTQ+
* Young people sexual health services
* Youth HIV clinic
* Sexual health support service for individuals who work, have worked or are associated with any part of the sex industry within London
* The service has a thriving HIV and sexual health research section supported by our Imperial College London academic colleagues.
* National Centre for Human Retrovirology, the specialist centre for patients infected with HTLV. We diagnose, treat and monitor all the patients in the UK with the HTLV infection and associated conditions with satellite services in Birmingham, York and Manchester.

During the CQC inspection in 2023, Jefferiss was noted as outstanding practice including: The senior team in the Jefferiss Wing, including sexual health and HIV services, demonstrated a sustained track record of building staff skill mix and service sustainability through promoting specialist training, practice education and rewarding performance.

**London North West University Healthcare NHS Trust.**

London North West University Healthcare NHS Trust (LNWH) cares for the people of Brent, Ealing, Harrow and Hillingdon. Our team of more than 8,200 clinical and support staff serve a diverse population of almost one million people.

Our Sexual & Reproductive Health Services are based on the three acute sites and across 8 community sites offering:

* Long-acting reversible contraception (LARC) and a full range of contraceptives and emergency contraception.
* Diagnosis and treatment of STIs, including evidence-based behaviour change interventions for key target groups.
* Advice and support for all aspects of sexual health services
* Robust user focussed HIV treatment and HIV testing amongst first time service users from higher risk populations, reducing rates of HIV transmission and STIs
* Pathways of care and support in the community with screening/identification and interventions for health and social risks such as:
  + Domestic violence
  + Child sexual exploitation
  + Female Genital Mutilation (FGM)
  + Child and adult safeguarding

The service has a key role in the main national sexual health measures, delivering an integrated, evidence-based STI management and contraceptive provision that meets all of an individual’s sexual health needs in one visit.

# Our Vision

**“Harness the digital revolution and be recognised as an industry leader for delivering pioneering digital services, enabling a joined-up experience for service users , our workforce and partners across all of Health and Social Care”**

Delivering on this vision is much more than just implementing a single IT system – this is about delivering transformational and cultural change across North West London, our people, processes and technology.

In order to deliver on our vision, we have the following objectives for this tender:

* **Unify** our sexual and reproductive health services onto a single, digital solution, ensuring a more joined-up approach to service delivery for both service users and our workforce
* **Simplify** our technology – reducing the burden on our workforce, ensuring the systems do the hard work so that clinical staff can focus on delivering care
* **Exploit**  state of the art technology to maintain and continue to pioneer service delivery and transform user experience
* **Interoperability** – ensure systems can communicate where necessary to enhance safety, quality and efficiency and unlock further digital opportunities
* **Sustainability** – build and implement a solution to maximise the value of our investment. The system must be dynamic and have the flexibility respond and adapt to rapidly changing business requirements in the sexual health landscape
* **Quality Improvement** – use data analytics to inform care decisions across the population and at a service user level

The outcomes we aim to deliver with this solution are as follows:

* All information relating to a service user’s sexual health record to be available in a single, digital solution via the platform of choice for the end user
* Service users can contribute directly to their record and make an informed decision about the service(s) they can access
* Enable delivery of services anywhere, on any device – from our corporate domain, in the community, and through virtual clinical services
* Implement technology-assisted processes and optimise/create efficiencies for the business
* Provide a strong enterprise service management function for the business – providing the right support, at the right time for our user community

# Scope

As we continue to develop and improve the delivery of sexual and reproductive health services, we require a dynamic and innovative Electronic Health Record (EHR) digital solution.

We strive to provide the best possible experience to our service users and require a market-leading EHR solution to support our strategic priorities. In line with the government’s vision for digital technology in health and social care, we aim to embrace technological innovation to transform service delivery and improve clinical safety and user experience.

It is imperative that technology platforms are fully integrated (“connected systems”) so that we can deliver a joined-up experience that fully meets the needs of our service users, clinical and business functions.

This tender has been structured into the following functional areas:

* **Core EHR Platform**: a paperless health record encompassing consultations, assessments, prescribing results reporting, a comprehensive results management system, clinic template management, task management, order communications (laboratory integration), patient notifications (via SMS or other digital solution) and, compliance with statutory reporting (eg. GUMCAD STI Surveillance, SRHAD and to commissioners),
* **Online Booking and Triage**: patient account self-management and appointment booking; patient completed pre-appointment assessments which triage patients into appropriate clinical pathways; dynamic referrals to home-testing services; results management which again directs patients to the appropriate care pathway
* **Clinic Flow:** self-registration & check-in, pre-assessment questionnaire, system triggered ordering of tests based on responses to pre-assessment questionnaire, express service and testing.
* **Partner Notification:** anonymous partner notification, cross-clinic rate tracking, to facilitate demonstration of compliance with national clinical standards
* **Communications Provider:** single / bulk notifications (via SMS or other digital solution) both for appointments and results notification, vaccine reminders, review reminders, sexual health advice, campaigns, service user engagement and feedback

The functional requirements will be evaluated as part the tender response and the proposed solution should follow these guiding principles:

* **Put people at the heart of everything** – service users, family, carers and staff. The proposed solution must be user-friendly and demonstrate understanding and respect for people's needs.
* **Be inclusive** - NHS services are for everyone. It is essential to ensure people with different physical, mental health, social, cultural or learning needs can fully access your solution.
* **Do the hard work to make it simple** - healthcare journeys can be complex; the solution must avoid pushing complexity onto those who use it
* **Make things open** - Share your learning. Share your work. Be transparent in your design decisions. Be accountable and have confidence in your solution.
* For the existing systems in-scope of this tender, the current contracts expire on the following dates:
  + CWFT 31/12/24 (plus provision to extend for 1 year)
  + ICHT 21/12/23 (this contract will be extended as required to allow completion of the tender process and implementation)
  + LNWH 31/08/24 (this contract will be extended if/when required to allow completion of the tender process and implementation)

## Service Delivery Locations

Our services are delivered across multiple clinical sites as shown below. The EHR solution must be fully functional across all sites. Each clinic also offers a range of community outreach services from which the proposed solution also needs to be accessible.

Further details on the Service Delivery locations (including operating hours) can be located here:

<https://www.chelwest.nhs.uk/services/hiv-sexual-health>

<https://www.shc.lnwh.nhs.uk>

https://www.imperial.nhs.uk/sexual-health

**Systems outside of scope for the tender, but the solution must integrate with:**

**Chelsea and Westminster NHS Foundation Trust**

* For all messaging, the CWFT Integration Engine is **InterSystems HealthShare**. For all messaging between healthcare applications – the solution must integrate with the TIE.
* For Pathology, we integrate with multiple providers, below. It is expected that the solution will integrate with our TIE and the Trust will handle the onward messaging and business logic to the relevant Pathology providers. Details below:
  + **North West London Pathology**: use Sunquest as their Laboratory Information Management System (LIMS) – supporting HL7 2.3 messaging.
  + **TDL Pathology**: use WinPath as their Laboratory Information Management System (LIMS) – supporting HL7 2.3 & 2.4 messaging.
  + **Cepheid**: the GeneXpert Infinity machines run on the GeneXpert Dx software – which supports HL7 2.5 messaging.
* For our business intelligence and data warehouse, CWFT has its own Integrated Data Repository (IDR) – which the data from the Sexual Health EHR solution will be imported for Trust-wide data and reporting purposes.

**Additional Points:**

* The existing systems are a mixture of on-premise (hosted in our own data centres) and SaaS (cloud-hosted) platforms. The Trust preference for the future state is cloud-hosted.
* The Sexual Health EHR platforms at C&W + WM are currently separate instances – inherited as part of the merger between the two hospital Trusts. One of the core objectives is to unify and provide a single EHR platform across all services to the benefit of our service users and workforce.

## Capacity Planning

Where possible, the data below has been captured on the current products and are accurate at the point of writing the tender specification.

**Chelsea and Westminster NHS Foundation Trust**

* Total number of appointments booked into, by site, including planned + walk-in slots:
  + **CWH: 2022 (full year) 275,000SMS Notifications - ~48555 messages sent per month, (+/- 10% variation)**
  + **WM: 2022 (full year) 27,500**
  + **SMS Notifications - ~4138 messages sent per month, (+/- 10% variation)**
* Online booking average ~5000 appointments booked per month (+/- 10% variation) across both Lilie Online and Mikkom systems
* Core Sexual Health EHR platform – estimate 250 concurrent users (both C&W & WM combined) – named user volumes:
  + **CWH**: 400 users
  + **WM**: 90 users
* OrderComms - ~80,000 clinical tests ordered per month across three different pathology service providers (+/- 10% variation)
* Touchscreen / Kiosk interactions: ~10,000 per month (+/- 10% variation)
* SMS Notifications - ~100,000 messages sent per month (+/- 10% variation)

**Imperial College Healthcare NHS Foundation Trust**

* Total number of appointments booked into, by site, including planned + walk-in slots:
  + **ICHT: 2022 (full fiscal year): 34,069**
* 2022 (fiscal year): Active health records by site:
  + **ICHT – 468,077**
* Online booking average ~ICHT- Average 182 a month
* Core Sexual Health EHR platform –
  + **ICHT: 198 active users**
* OrderComms - ~on average 9,000 clinical tests ordered per month
* Touchscreen / Kiosk interactions: ~**NOT APPLICABLE FOR ICHT**
* SMS Notifications - ~**ICHT 5357 per month using Millcare system**

**London North West University Healthcare NHS Trust.**

* Total number of appointments booked into, by site, including planned + walk-in slots (2022/23):
  + **LNWH 2022 (full fiscal year):** 102,000
* Active health records by site
  + **LNWH** **2022 (full fiscal year):** 235,550
* LNWH are in the process of implementing Online booking using Lilie Hub and Self-check in with Lilie Touch.
* Core Sexual Health EHR platform – estimate 100 concurrent users across the acute and community sites
* OrderComms - ~18,000 clinical tests ordered per month across three different pathology service providers (+/- 10% variation)
* Touchscreen / Kiosk interactions: ~10,000 per month (+/- 10% variation)
* SMS Notifications - ~200,000 messages sent per month, (+/- 10% variation)

## Technology Infrastructure

**Chelsea and Westminster NHS Foundation Trust**

* As part of the Digital & Technology roadmap for the Sexual Health service, the Trust has rationalised the technology estate running Lilie (both C&W + WM). We have migrated both the Lilie C&W + WM environments onto the same infrastructure (co-hosted). The current infrastructure (servers, load balancers, etc) is virtualised – sitting on Dell VxRail and Kemp infrastructure in our core data centres. Mission critical services are deployed in a highly available manner and support the failover from our primary -> secondary data centres in the event of a disaster.
* The preferred solution for the Trust to move to a supplier hosted application which incorporates:
  + Hosting in UK only datacentre with capability for full datacentre failover (DR)
  + Proposed solutions must be enabled and costed to at least the same level of integration (e.g. labs and results) as the existing system
  + The supplier must include a full data migration from the existing system to the proposed system including an approach to evidencing data integrity, data completeness and reporting from legacy data remains compliant.
  + The supplier is responsible for all upgrades, patching, backup, protection and recovery of the proposed system and must remain in full compliance with NHS guidelines and requirements in these areas. The supplier is also responsible for capacity management, system performance and system resilience/recovery over the full duration of the contract
* Under business continuity (for the EHR platform), the Recovery Time Objective (RTO) is 4 hours and Recovery Point Objective is 15 minutes. Emergency Preparedness, Resilience and Response (EPRR) will be reviewed and evaluated as part of the tender.
* End users consume the Lilie application via a local install on our desktop estate at present. It is preferred that the proposed solution is cloud based and accessed from the Trust securely via browser (MS Edge).
* The Trust Operated a Windows 10 Enterprise desktop environment. All applications must be compatible with the latest supported version of Windows 10 (branch version) and Windows 11 supported variants
* Most desktops have a minimum standard of i5 processor, 16GB RAM and minimum 250 GB SSD.
* Patching & Distribution: Trust will patch all critical, security and MS office patches soon after release. This will not be amended for any application/supplier. The supplier is responsible for smooth operation of their application throughout these patches. SCCM is used to patch devices. Vendors must supply all applications and updates in a package suitable and native to SCCM distribution.
* 3rd Party Software Dependencies: Any dependency on 3rd party applications such as Adobe, Java etc must be declared during the procurement, tendering and contracting stages. Any dependency on licenced applications must be clearly declared and will be considered as part of the cost of the solution at evaluation stage. The vendor is liable for these licence costs and must supply the licences or pay the Trust accordingly. This responsibility is the suppliers for the duration of the relationship with the Trust. If a previously free 3rd party app moves to a paid-for model, the supplier is liable for these costs or required to provide the options for a suitable, supported and certified free-to-use alternative.
* Single Sign-on: The trust uses SSO with NHS.net/Active Directory/NHS Smartcard credentials though ADLDS/ADFS and Azure Active directory to help users manage access to various systems. Suppliers must state the available options and compliance against these SSO options during the procurement, tendering and contracting stagesMulti-Factor Authentication (MFA): Applications which are externally accessible must incorporate MFA capabilities. The supplier must demonstrate the options for MFA, particularly for externally (internet) accessible application, MFA for supplier support and MFA for privileged accounts.
* **AntiVirus** – The trust installs AV on all of its endpoints. Exclusions are not routinely made. Any request for AV exclusions should not be assumed to be approved and must be declared at the point of tender and contracting.
* **USB Peripherals** – All USB peripherals including models must be declared and approved by the Trust. The Trust whitelists devices. All peripheral devices must encrypt at rest and in transit (AES256 standard or above)
* **Default Browser** – The Trust uses the latest patched version of MS Edge as its default browser. The latest patched version of Chrome is also installed as a secondary browser.
* **Default search Engine** – The Trust default search engine is ecosia, powered by MS Bing.
* **Browser Extensions** – the Trust does not install browser extension, plugins, etc by default. Any dependencies on these must be declared during the procurement, tendering and contracting stages.
* The Trust Operates a range of desktop environments for which all applaictions must be, and remain, compatible and supported: Physical desktops – all in onesLaptops – Typically 14 inch with Touch screenVDI – Via VMWare Horizon View (Windows guest machines) Microsoft Always On VPN – Run from Trust laptops A4 Printing is provided via an external Managed Proint Provider – Apogee. All software must be compatible with this A4 printing and supporting software (print queues and papercut) Supplier support access is managed via our specialist solution which requires multi-factor authentication for suppliers. C Drive access is not permitted for users or suppliers. The trust uses NHS.net mail as its primary and only email service. MS Office The Trust operates a mixture of MS Office 2016 and MS Office 365. All applications should be fully compatible with MS Office 365 online versions. If any application requires a locally installed version of MS Office, this must be highlighted by the supplier during the tender and contracting processes.
* The current kiosk software (Lilie Touch) runs on our standard Windows 10 corporate image and hardware.
* The current label printing hardware (for both express sample labels + label printing for test requests) is the Zebra GX420t (blend of both USB / network-enabled devices).
* The Trust’s infrastructure and health monitoring solution is Nagios XI.
* The other existing systems are either accessed via the Sexual Health EHR platform (i.e. directly in Lilie – seamless to the end user) or via a browser (web application).
* For OrderComms, all messages exchanged between North West London Pathology traverse the Trust Integration Engine (TIE). TDL Pathology and Cepheid messaging is a direct point-to-point interface – but this must change with the final solution (to ensure every message traverses the TIE).

**Clinical Safety**

* The system must be DCB0129 complaint – related to the manufacture of systems for healthcare (evidenced).
* There should be evidence of DCB0160 compliance though implementation at another NHS acute hospital (clinical safety report and hazard log to be shared – redacted if necessary)

**Data Protection**

* The supplier should be Cyber Essentials plus certified
* The supplier should be registered with the ICO
* The supplier should have ISO27001 certification (evidence)
* The supplier would ideally be registered for the DSP Toolkit return
* An example DPIA and Data flow diagram from a previous implementation should be shared

**Cyber Security**

* The supplier must agree on request to permit a penetration test from one or more Trusts. These tests will have an agreed scope and at least 2 weeks notice will be given. The supplier must remediate all critical and high findings within 6 months.
* The supplier should be Cyber Essentials plus certified
* If any Trust managed servers are required to deliver the proposed solution, the numbers, type and specification of the servers should be communicated at the earliest opportunity.
* The solution must support Multi-factor authentication
* MFA must be in place for all administrator accounts (Supplier and Trust)

**Network**

* The supplier should have HSCN connectivity
* The supplier should outline how remote support will be conducted for end users
* All client devices and medical devices will operate from dynamic DHCP

**DR & Hosting**

* All system data and infrastructure must be hosted externally in a UK only cloud facility. This can either be the suppliers cloud or UK public cloud such as Azure or AWS. A tier 2 or 3 datacentre is required for hosting.
* The supplier is responsible for backing up all data at least every 24 hours, regular testing of backups and restores and providing at least one annual assurance exercise output
* The supplier is fully responsible for IT Disaster recovery of the system and the data within it
* DR plans must have defined RPOs, RTOs and failure modes
* The supplier must agree to participate as requested in Trust DR exercises
* The Supplier must be able to provide evidence of successful ITDR testing for assurances to the client. An annual exercise report must be shared with Trusts.
* A test system should be available for upgrade testing and interface testing

**Accessibility**

* When using patient portal and self check-in apps, patients must be able to access these services from
* Any mobile apps (for clinicians or patients) must be signed apps already published via Google or Apple app stores
* Online training packages should be available and maintained to support users with the proper use and key functions of the software
* Our network infrastructure is as follows:
  + **The following are considered to be part of our core network and located on / next to our hospital premises:** Chelsea and Westminster Hospital, West Middlesex University Hospital, Twickenham House, John Hunter Clinic. These clinics are all on our corporate domain and have C&W-owned computer, network and server infrastructure.
  + **The following are campus sites, that are part of our corporate domain but are based out in the community:** 10 Hammersmith Broadway, 56 Dean Street and 34 Dean Street. These sites have dedicated C&W-owned computer, network and server infrastructure.
  + **The following are satellite sites where the Trust rent space from another service provider / share the building with other clinical services:** Heart of Hounslow Centre for Health and Feltham Centre for Health. The clinical and operational teams working from these sites access C&W systems via a remote access toolset (Citrix / RDP) all via the N3 / HSCN network.
* All mission critical services are monitored via our monitoring toolset, Nagios – that enables us to view infrastructure and application health from a single pane of glass. This is a mix of monitoring methods – using standard windows counters + performance, database health monitoring, application health monitoring (via services, APIs, etc).

\*RDP = Remote Desktop Protocol

**Imperial College Healthcare NHS Foundation Trust**

* The Trust currently uses Millcare sexual health system. This is internally hosted on Windows virtual servers (VMWare hypervisor) including database.
* The preferred solution for the Trust to move to a supplier hosted application which incorporates:
  + Hosting in UK only datacentre with capability for full datacentre failover (DR)
  + Proposed solutions must be enabled and costed to at least the same level of integration (e.g. labs and results) as the existing system
  + The supplier must include a full data migration from the existing system to the proposed system including an approach to evidencing data integrity, data completeness and reporting from legacy data remains compliant.
  + The supplier is responsible for all upgrades, patching, backup, protection and recovery of the proposed system and must remain in full compliance with NHS guidelines and requirements in these areas. The supplier is also responsible for capacity management, system performance and system resilience/recovery over the full duration of the contract
* Under business continuity (for the EHR platform), the Recovery Time Objective (RTO) is 4 hours and Recovery Point Objective is 15 minutes. Emergency Preparedness, Resilience and Response (EPRR) will be reviewed and evaluated as part of the tender.
* End users consume the Millcare application via a local install on our desktop estate at present. It is preferred that the proposed solution is cloud based and accessed from the Trust securely via browser (MS Edge).
* The Trust Operates a Windows 10 Enterprise desktop environment. All applications must be compatible with the latest supported version of Windows 10 (branch version) and Windows 11 supported variants
* Most desktops have a minimum standard of i5 processor, 16GB RAM and minimum 250 GB SSD.
* Patching & Distribution: Trust will patch all critical, security and MS office patches soon after release. This will not be amended for any application/supplier. The supplier is responsible for smooth operation of their application throughout these patches. SCCM is used to patch devices. Vendors must supply all applications and updates in a package suitable and native to SCCM distribution.
* 3rd Party Software Dependencies: Any dependency on 3rd party applications such as Adobe, Java etc must be declared during the procurement, tendering and contracting stages. Any dependency on licenced applications must be clearly declared and will be considered as part of the cost of the solution at evaluation stage. The vendor is liable for these licence costs and must supply the licences or pay the Trust accordingly. This responsibility is the suppliers for the duration of the relationship with the Trust. If a previously free 3rd party app moves to a paid-for model, the supplier is liable for these costs or required to provide the options for a suitable, supported and certified free-to-use alternative.
* Single Sign-on: The trust uses SSO with NHS.net/Active Directory/NHS Smartcard credentials though ADLDS/ADFS and Azure Active directory to help users manage access to various systems. Suppliers must state the available options and compliance against these SSO options during the procurement, tendering and contracting stagesMulti-Factor Authentication (MFA): Applications which are externally accessible must incorporate MFA capabilities. The supplier must demonstrate the options for MFA, particularly for externally (internet) accessible application, MFA for supplier support and MFA for privileged accounts.
* **AntiVirus** – The trust installs AV on all of its endpoints. Exclusions are not routinely made. Any request for AV exclusions should not be assumed to be approved and must be declared at the point of tender and contracting.
* **USB Peripherals** – All USB peripherals including models must be declared and approved by the Trust. The Trust whitelists devices. All peripheral devices must encrypt at rest and in transit (AES256 standard or above)
* **Default Browser** – The Trust uses the latest patched version of MS Edge as its default browser. The latest patched version of Chrome is also installed as a secondary browser.
* **Default search Engine** – The Trust default search engine is ecosia, powered by MS Bing.
* **Browser Extensions** – the Trust does not install browser extension, plugins, etc by default. Any dependencies on these must be declared during the procurement, tendering and contracting stages.
* The Trust Operates a range of desktop environments for which all applications must be, and remain, compatible and supported: Physical desktops – all in ones/Laptops – Typically 14 inch with Touch screen
* VDI – Via VMWare Horizon View (Windows guest machines)
* Microsoft Always On VPN – Run from Trust laptops A4 Printing is provided via an external Managed Proint Provider – Apogee.
* All software must be compatible with this A4 printing and supporting software (print queues and papercut) Supplier support access is managed via our specialist solution which requires multi-factor authentication for suppliers.
* C Drive access is not permitted for users or suppliers. The Trust uses NHS.net mail as its primary and only email service.
* MS Office - The Trust operates a mixture of MS Office 2016 and MS Office 365. All applications should be fully compatible with MS Office 365 online versions. If any application requires a locally installed version of MS Office, this must be highlighted by the supplier during the tender and contracting processes.

**Clinical Safety**

* The system must be DCB0129 complaint – related to the manufacture of systems for healthcare (evidenced).
* There should be evidence of DCB0160 compliance though implementation at another NHS acute hospital (clinical safety report and hazard log to be shared – redacted if necessary)

**Data Protection**

* The supplier should be Cyber Essentials plus certified
* The supplier should be registered with the ICO
* The supplier should have ISO27001 certification (evidence)
* The supplier would ideally be registered for the DSP Toolkit return
* An example DPIA and Data flow diagram from a previous implementation should be shared

**Cyber Security**

* The supplier must agree on request to permit a penetration test from one or more Trusts. These tests will have an agreed scope and at least 2 weeks notice will be given. The supplier must remediate all critical and high findings within 6 months.
* The supplier should be Cyber Essentials plus certified
* If any Trust managed servers are required to deliver the proposed solution, the numbers, type and specification of the servers should be communicated at the earliest opportunity.
* The solution must support Multi-factor authentication
* MFA must be in place for all administrator accounts (Supplier and Trust)

**Network**

* The supplier should have HSCN connectivity
* The supplier should outline how remote support will be conducted for end users
* All client devices and medical devices will operate from dynamic DHCP

**DR & Hosting**

* All system data and infrastructure must be hosted externally in a UK only cloud facility. This can either be the suppliers cloud or UK public cloud such as Azure or AWS. A tier 2 or 3 datacentre is required for hosting.
* The supplier is responsible for backing up all data at least every 24 hours, regular testing of backups and restores and providing at least one annual assurance exercise output
* The supplier is fully responsible for IT Disaster recovery of the system and the data within it
* DR plans must have defined RPOs, RTOs and failure modes
* The supplier must agree to participate as requested in Trust DR exercises
* The Supplier must be able to provide evidence of successful ITDR testing for assurances to the client. An annual exercise report must be shared with Trusts.
* A test system should be available for upgrade testing and interface testing

**Accessibility**

* When using patient portal and self check-in apps, patients must be able to access these services from
* Any mobile apps (for clinicians or patients) must be signed apps already published via Google or Apple app stores
* Online training packages should be available and maintained to support users with the proper use and key functions of the software

**London North West University Healthcare NHS Trust.**

* The virtual servers that run the Lilie environment are sitting in a VMware ESXi environment with both HA and DRS enabled giving a high level of resilience.
* Under business continuity for the Lillie system, the Recovery Point Objective is 1 hour.  Emergency Preparedness, Resilience and Response (EPRR) will be reviewed and evaluated as part of the tender.
* The majority of end users consume the Lilie via “Remote App” and a few people have the application via a local install.
* All PCs are running Windows 10
* The Trust’s antivirus and threat detection software is Trellix. Microsoft Defender for Endpoint is installed on all our Servers. As part of Rubrik’s Enterprise software, Ransomware monitoring is in place.
* The Trust’s infrastructure and health monitoring solution is PRTG.
* Supplier access to on-premise virtual servers is provided via RDP through HSCN.
* The application delivery toolset for LNWUH is Microsoft System Centre Configuration Manager (SCCM).  The Trust uses SCCM significantly reduce administration overheads for the technical teams in deployment and managing our application estate.
* Interfacing goes directly from Lilie to TDL. It does NOT go via TIE.
* Our network infrastructure is as follows:
  + **The following are considered to be part of our core network and located on / next to our hospital premises:** Northwick Park Hospital, Ealing Hospital, and Central Middlesex Hospital.  These clinics are all on our corporate domain and have LNWUH-owned computer, network and server infrastructure.
  + **The following are campus sites, that are part of our corporate domain but are based out in the community:** Caryl Thomas Centre, Harrow; Mattock Lane Health Centre, Ealing and The Wakley Centre, Hillingdon.
  + **The following are satellite sites where the Trust rent space from another service provider / share the building with other clinical services:** The Oakland Medical Centre and Hesa Centre, in Hillingdon; Southall Broadway, Ealing; Hillside Primary Care Centre, Brent.
  + All mission critical services are monitored via our monitoring toolsets provided by Nagios, PRTG and Cisco.

# Core Requirements

In addition to the Scope of the procurement, the Trusts have identified a list of core requirements that all bidders should aim to meet (or provide an alternative solution) to be considered:

|  |  |
| --- | --- |
| **Functional Area** | **Core Requirements** |
| Core EHR | The EHR system shall allow healthcare professionals the ability to create, view and amend and remove data in a sexual health focused clinical record. This will include - Consultations, Assessments, Test Orders, Test Results, Audit Trails and Correspondence. |
| Core EHR | The EHR solution is compatible with Windows 10 |
| Core EHR | he EHR solution is compatible with the following (for browser-based components): Microsoft Edge, Google Chrome |
| Core EHR | The hardware that is part of the solution is compatible with Trend Micro - our threat detection and anti-virus software. |
| Core EHR | The EHR solution fully integrates with our Pathology Services providers - there must be no manual requesting / result reporting/notification. |
| Core EHR | The EHR solution enables us to capture the relevant information for statutory reporting requirements as part of the clinical workflow Genitourinary Medicine Clinic Activity Dataset (GUMCAD) STI Surveillance and Sexual and Reproductive Health Activity Datasets) and that the information is extracted in the correct format for the regulatory organisations. |
| Core EHR | The EHR system allows the healthcare professional to add a Flag (warnings, healthcare alerts, and contact restrictions) onto the patient record |
| Online Booking | The solution shall allow a service user to request, amend and cancel appointments. This must directly integrate with the Core EHR platform to ensure effective and efficient use of appointment slots. |
| Online Booking | The solution must enable service users to self-register for an account and map directly to their health record. |
| Communications Provider | The solution shall have an integrated system for single and bulk messaging that is fully integrated with the Core EHR platform and can track the delivery status of notifications via SMS and/or other digital platform |
| Partner Notification | When notifying partners, the platform must enable service users to remain anonymous if they do not wish to be identified. |
| Partner Notification | The platform must enable us to access data and information about our key performance indicators (KPIs) relating to Partner Notification (clinical / statutory / commissioning). |
| Clinical Flow | Service users shall be able to check-in and provide pre-consultation information via kiosks, touchscreens or online portals that trigger appropriate test requests and this information is updated in real-time in the Core EHR platform. |
| Clinical Flow | The data that the service user has entered through the digital platform or touchscreen must be available in real time for access by NHS staff during the consultation. |
| All | We must be able to apply the relevant NHS identity/identities to the digital platform. |
| Online Booking | Patients shall be able to complete pre-clinic assessments online that enables patients to be streamed into the correct pathways and appointments, which is fully integrated with the EHR. |
| Order Comms | The solution must offer fully automated delivery of results via SMS or other digital platform |

# Desirable Requirements

**The following suggestions are taken from the BASHH EHR specification and reflect our vision of how the EHR solution can support our values and strategic priorities. They should not be interpreted as essential but act as guidance. Our Sexual Health Services are open to considering solutions that do not include these, or that may propose alternative functional solutions**

|  |  |
| --- | --- |
| **Functional Area** | **Requirements** |
| **Data of Subjective Origin (DoSO) domains** | **STI history**  Data fields - see BASHH guidance *2019 UK National Guideline for consultations requiring sexual history taking: Clinical Effectiveness Group British Association for Sexual Health and HIV* <https://www.bashhguidelines.org/media/1241/sh-guidelines-2019-ijsa.pdf>    Further data fields for clinical reviews with gay and bisexual men and other men who have sex with men (GBMSM): see BASHH guidance *2016 United Kingdom national guideline on the sexual health care of men who have sex with men* <https://www.bashhguidelines.org/media/1162/msm-2016.pdf>  Continuous template to support diagnosis, management and follow up of syphilis – see *UK national guidelines on the management of syphilis 2015:* <https://www.bashhguidelines.org/media/1148/uk-syphilis-guidelines-2015.pdf>  Continuous template that supports the assessment for, supportive and ongoing investigations for, results trends over time for, and prescription of HIV Pre-exposure prophylaxis (PrEP) – see *BHIVA/BASHH guidelines on the use of HIV pre-exposure prophylaxis (PrEP) 2018:* <https://www.bhiva.org/file/5b729cd592060/2018-PrEP-Guidelines.pdf> |
| **Data of Subjective Origin (DoSO) domains** | **HIV history**  Data fields appropriate for new and follow-up patients living with HIV – see 2019 *BHIVA guidelines for the routine investigation and monitoring of adult HIV-1-positive individuals:* https://www.bhiva.org/file/DqZbRxfzlYtLg/Monitoring-Guidelines.pdf and *part 1 [Assessment] of EACS Guidelines 2020:* <https://www.eacsociety.org/media/guidelines-10.1_finaljan2021_1.pdf>    HIV care overview that offers rapid access to a chronological history  HIV MDT facilitation via a single screen HIV care summary, combined with documentation which updates the patient record with the documented MDT discussion and agreed outcomes |
| **Data of Subjective Origin (DoSO) domains** | **Contraception and Reproductive Health history**  Data fields - see paper *FSRH Service Standards for Record Keeping in Sexual and Reproductive Healthcare Services 2019*:  <https://www.fsrh.org/standards-and-guidance/documents/fsrh-service-standards-for-record-keeping-july-2019/>  Continuous template that supports the assessment for and provision of Emergency Contraception, including the provision of a post-coital intrauterine device (PCIUD) if provided – see *FSRH Guideline Emergency Contraception 2020:* <https://www.fsrh.org/standards-and-guidance/documents/ceu-clinical-guidance-emergency-contraception-march-2017/>  Continuous template that supports the retrospective review of relevant data fields, subsequent counselling to support contraceptive choices and journey completion via provision of the selected method - see paper *FSRH Service Standards for Record Keeping in Sexual and Reproductive Healthcare Services 2019*:  <https://www.fsrh.org/standards-and-guidance/documents/fsrh-service-standards-for-record-keeping-july-2019/>  Continuous template that supports the retrospective review of relevant data fields for an individual LARC method, the counselling of this method, the provision of the method and subsequent follow up visits throughout the compound/device lifetime. – see FSRH guidance on LARC methods: <https://www.fsrh.org/standards-and-guidance/fsrh-guidelines-and-statements/method-specific/>  Continuous template that supports the assessment and management of complications of contraceptive methods (e.g., management of abnormal uterine bleeding)  Continuous template that supports the assessment and retrospective review other aspects of a sexual and reproductive healthcare (SRH) consultation (e.g., preconception counselling, menopause care, cervical cytology) |
| **Data of Subjective Origin (DoSO) domains** | **Safeguarding history**  Data fields – see clinical assessment in BASHH National Guideline on the Management of Sexually Transmitted Infections and Related Conditions in Children and Young People (2021): <https://www.bashhguidelines.org/media/1294/children-and-yp-2021.pdf>    Approved evidence-based safeguarding assessment tool – e.g., Spotting the signs (2014): <https://www.bashh.org/documents/Spotting-the-signs-A%20national%20proforma%20Apr2014.pdf>  Continuously updatable safeguarding assessment tool that supports adaptive safeguarding processes according to reported risks  Prompted safeguarding needs according to defined criteria (e.g., aged <16, alert of known vulnerability, multiple attendances)  Template section to support clinical assessment of competency according to Fraser Guidelines [when relevant]  Demonstrate a clear audit trail of when a safeguarding record has been compiled, edited, or deleted  The ability to document consent by next of kin / power of attorney  Incorporate or provide links to local safeguarding pathways  Clear documentation of MDT signposting, referral, meetings and outcomes |
| **Data of Subjective Origin (DoSO) domains** | **Partner Notification history**  An integrated partner notification (PN) suite compliant with the requirements of *The SSHA Manual for Sexual Health Advisers 2004*: <https://ssha.info/resources/manual-for-sexual-health-advisers/>  The function to produce physical and digital contact slips.  Searching for reported partners must include a wide number of search fields, including initials, nicknames, name fragments and physical descriptors.  Ensure PN information entered for contacts is not stored within the clinical records of the index patient.  Clearly indicate when information presented on screen is from a third party and should not be shared with the source patient being reviewed.  The function (ideally one-click) to move back and forth between index and contacts records.  Quick, read-only view of a second patient whilst continuing to review an index patient's record.  PN processes must create an audit trail that documents updates and changes made as they occur. This audit trail must have the function to be interrogated.  Summary numerical counts within patient record for key metrics – total partners, total contactable partners, total contacted and total verified.  The ability to visualise contacts as a visual network map with relevant information including demographics, exposure details, communication log, notification status, treatment status and other notes.  Capture and calculation for appropriate reports consistent with the requirements of BASHH PN auditable outcomes, including success rates specific to patient cohorts and/or individual diagnoses.  Facilitate documentation of complex Health Advisor work, as defined in recent draft criteria from the Society of Sexual Health Advisors (SSHA). |
| **Data of Objective Origin (DoOO) domains** | The other major class of patient data we define is Data of Objective Origin (DoOO).  DoOO tend to be quantitative or intrinsically objective (e.g., test results, vaccinations, prescribing and radiology), and not descriptive or narrative.  Below is guidance on the specific DoOO domains that need to be supported by an ISH EHR. |
| **Data of Objective Origin (DoOO) domains** | **Laboratory tests**  **Test requesting**  Interoperability with multiple laboratories integrated within a single EHR, either directly or via integration with third-party  Communication of full granular detail in messaging between EHR and laboratories  Availability of order sets for common patient scenarios (e.g., T2, T4, T4TT, PrEP, PEP, HIV baseline, HIV routine)  Printing labels with barcode and clinical details to local printers in clinical rooms  Ability to scan barcode of samples physically leaving clinic and being received by laboratory (transport audit)  Ability to document and manage requests [including request forms] for cervical smear testing |
| **Data of Objective Origin (DoOO) domains** | **Results management**  Displays status of tests that are: requested, received in lab, pending processing and completed, in real time.  Supports automated service-defined NORMAL results processes (e.g., automated normal result SMS and/or Personal Health Record (PHR) notifications.  Support automated service-defined ABNORMAL results processes (e.g., automated abnormal SMS, abnormal results task lists according to generic roles (e.g., health advisor, doctor, nurse) and also for specific clinicians, configurable by service)  Configurable to support appropriate automated management of mixed results within a test set  Allows results to be allocated ‘for review’  A service/user-defined results viewer to assess filtered results:  - overview on a single screen  - appropriate use of timelines or other appropriate representation  - appropriate use of visual techniques (e.g., data grouping, aggregation and transformation, colour, tool tips)  \*\*Ability to reconcile tests requested with returned results, identifying and flagging any missing or delayed test results\*\*  Supports laboratory requests under hospital number or clinic number, with an opt-out option to protect confidentiality (results received into single patient record)  Supports STI laboratory results overview including: point-of-care tests (urine dip, pregnancy test, microscopy, TV Ag), general microbiology, STI-specific tests (CT, LGV, GC, MGen), ulcer-specific tests (HSV, syphilis, MPV), Blood-borne infections (HIV, STS, HAV, HBV, HCV)  Supports HIV laboratory results including: urine chemistry, FBC, U&E, eGFR, LFT, bone studies, clotting studies, haematinics, HIV viral load, CD4 cell count  SRH laboratory results to include: FSH, LH, Androgens, Oestradiol, Prolactin, Thyroid Function, thrombophilia screen, coagulation profile, serum ferritin |
|  | **Vaccinations** |
| **Data of Objective Origin (DoOO) domains** | **For Hepatitis A virus (HAV) vaccine, the ability to:**  View vaccination status:  - Naturally immune  - Immune by vaccine  - Vaccination in progress  - Not known  - Vaccine declined  - Previous adverse reaction  - Other  View relevant test results on the same screen: - Blood borne infection serology (HAV, HBV, HCV, HIV, STS)  Order a course of vaccinations according to a pre-set schedule as well as individual doses  View, edit and record all doses administered by date, brand, dose and vaccinator (including elsewhere)  View all future intended doses by date against the intended schedule  Alert for missed scheduled doses |
| **Data of Objective Origin (DoOO) domains** | **For Hepatitis B virus (HBV) vaccine, the ability to:**  View, edit and record HBV risk status: - GBMSM  -Sex Worker  - Geographical risk  - Sexual assault  - IVDU  - HCV infection  - Other  - Not known  View, edit and record HBV vaccination status: - Naturally immune  - Fully immune by vaccine  - Partially immune by vaccine  - Non-responder to previous vaccine  - Vaccination in progress  - Not known  - Vaccine declined  - Previous adverse reaction  - Other  View relevant test results on the same screen: - Blood borne infection serology (HAV, HBV, HCV, HIV, STS)  - LFTs  Order a course of vaccinations according to a pre-set schedule as well as individual doses  View, edit and record all doses administered by date, brand, dose and vaccinator (including elsewhere)  View all future intended doses by date against the intended schedule  Alert for missed scheduled doses |
| **Data of Objective Origin (DoOO) domains** | **For Human Papilloma Virus (HPV) vaccine, the ability to:**  View, edit and record HPV risk status  View, edit and record HPV vaccination status:  - Never received vaccine  - Partially vaccinated  - Fully vaccinated  - Vaccination in progress  - Not known  - Vaccine declined  - Previous adverse reaction  - Other  Order a course of vaccinations according to a pre-set schedule as well as individual doses  View, edit and record all doses administered by date, brand, dose and vaccinator (including elsewhere)  View all future intended doses by date against the intended schedule  Alert for missed scheduled doses |
| **Data of Objective Origin (DoOO) domains** | **For Smallpox vaccine, the ability to:**  View, edit and record MPox virus (MPV) risk status:  - GBMSM  - Contact of infection  - Worker in sex on premises venue  - Health Care Worker  - Other  View, edit and record Smallpox vaccination status:  - Naturally immune  - Fully immune by vaccination  - Partially immune by vaccination  - Vaccine declined  - Previous adverse reaction  - Other  View relevant test results on the same screen:  - Blood borne infection serology (HAV, HBV, HCV, HIV, STS)  - MPV blood and swab results  Order a course of vaccinations according to a pre-set schedule as well as individual doses  View, edit and record all doses administered by date, brand, dose and vaccinator (including elsewhere)  View all future intended doses by date against the intended schedule  Alert for missed scheduled doses |
| **Data of Objective Origin (DoOO) domains** | **For the following vaccines, which could be administered elsewhere:**  Influenza vaccine  Coronavirus vaccine  Pneumococcal vaccine (PCV-13)  Pneumococcal vaccine (PPV-23)  Other  The ability to:  View, edit and record all doses administered by date, brand, dose and vaccinator (including elsewhere)  View all future intended doses by date against the intended schedule  Alert for missed scheduled doses |
| **Data of Objective Origin (DoOO) domains** | **Prescribing**  An electronic prescribing suite compliant with BNF recommendations for computer-issued prescriptions: <https://bnf.nice.org.uk/medicines-guidance/prescription-writing/> and FSRH Service Standards for Record Keeping in Sexual and Reproductive Healthcare Services 2019:  <https://www.fsrh.org/standards-and-guidance/documents/fsrh-service-standards-for-record-keeping-july-2019/>  System clearly documents the creator of prescriptions and provides an audit trail for any amendments to that prescription.  Distinction between prescribing, provision of medication by PGD and in-clinic administration.  Record and view reasons treatments were commenced and reasons they were discontinued.  Record and review batch numbers, expiry dates and clinical notes when administering injectable therapy.  Record and review device type, batch numbers, expiry dates and clinical notes when fitting an intrauterine device or contraceptive implant.  Electronic formulary is customisable by the service (e.g., to add in newly available treatments, remove those withdrawn from circulation, update treatment coding in line with national surveillance system recommendations).  Overview of prior prescribed medicines.  Track how medications are supplied to patients (e.g., handed over, collected or posted).  Automated audit trail for all medications supplied by post.  An updatable list of known drug allergies, including details of severity and date of occurrence, ensuring this information is prominently displayed to users at all times.  Automatic alert of prescribed medications for known allergies.  Automatic alert when prescribing medicines subject to MHRA alerts (eg. quinolones).  Automatic assessment alert of co-prescribed medications for known drug interactions.  Ability to integrate with the NHS Summary Care Record to view allergies and concomitant medications or similar.  Prescribing information automatically populates national reporting information (e.g., HARS). |
| **Data of Objective Origin (DoOO) domains** | **Radiology**  Radiology image hosting and viewing likely to remain outside of sexual health EHR  EHR system able to import and store radiology images and reports, including bedside ultrasound, with a filter function to identify and access them with the patient dataset  Continuous template that supports the documentation of bedside ultrasound, including transvaginal, abdominal and musculoskeletal assessments |
| **Data of Objective Origin (DoOO) domains** | **Patient Photographs**  The ability to store clinical photographs of patients securely, when taken by a clinician.  The ability to store clinical photographs of patients securely, when taken by a patient. |
| **Data of Objective Origin (DoOO) domains** | **Files**  Secure uploading of documents, email and message chains, and scanned documents.  Ability to read documents, email and message chains, and scanned documents in web browser.    Ability to download documents, email and message chains, and scanned documents. |
| **Clinical Usability** | **Clinical Usability**  Meets 1998 ISO/IEC Standard 9241-11 definition of usability:  ‘*the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use*’. ‘Specified users’ are the clinicians and clinical administrators who use the EHR, and the ‘specified context of use’ is ISH clinical practice.  Provision for adequate engagement with clinical teams to ensure the highest level of clinical usability. Applied across all DoSO and DoOO domains, in a manner that is specific and appropriate to each domain. |
|  | **Overview of data** |
| **Clinical Usability** | **General overview**  General overview offers situational awareness of the clinical data landscape, and also a point of reference to support specific tasks such as exploration, navigation, understanding, planning and monitoring of patient data.  Requirements apply to individual patient data and also cohort patient data, detailed below where appropriate.  High-level, visually ‘efficient’ overview(s), ideally on a single screen.  Appropriate representation of continuous or episodic events over time, using timelines or other techniques such as tables (e.g., for vaccines, a visual timeline of date administered and dose, as well future scheduled dose and missed doses).  Appropriate representation of past events that remain clinically salient moving forward, regardless of their occurrence over time (e.g., allergies, significant clinical events, significant safeguarding situations).  Appropriate visibility representation of salient cohort patient data with respect to time (data that may have occurred at a point in time but remain clinically relevant moving forward, such as dates of diagnosis, dates or contraceptive procedures, key results.  Pre-set or user-selectable overview(s) that support the following date views:  - data across all dates  - data across a range of dates  - data from a single date  Pre-set or user-selectable overview(s), commonly called dashboards, that support the following:  - collating and presenting results data within a single patient record to support retrospective clinical review (e.g., STI and HIV results dashboard)  - collating and presenting of clinical data fields from multiple templates within a single patient record into a single summary view (e.g., summary contraception history when reviewing contraceptive choices, HIV MDT proformas).  - viewing data fields collated from multiple patient records on a single screen (e.g., supporting PN by viewing multiple reported contacts concurrently).    - easy review of previous communication within a single patient record (whether face-to-face, telephone, online or web-based).    - viewing data fields collated from multiple patient records on a single screen.    - easy review of previous communication within a patient cohort (whether face-to-face, telephone, online or web-based). |
| **Clinical Usability** | **Navigation of data silos**  Where overview is not provided or required, the user must be able simultaneously to access data from different sources (e.g., DoSO domains, DoOO domains, appointment details, patient demographics, diagnosis and service provision codes, guidelines). In other words, un-navigable data silos must be avoided. |
| **Clinical Usability** | **Reasoning with data**  Clinical reasoning is the principal process by which clinicians make sense of patient data. An EHR interface can support this process by representing data in a way that demonstrates clinical relevance and salience. This can be achieved by considering data mapping, visual mapping and user interaction (Card, S.; Mackinlay, J. & Shneiderman, B., ed. (1999), *Readings in Information Visualization: Using Vision to Think* , Morgan Kaufmann , California, USA). |
| **Clinical Usability** | **Data mapping**  Appropriate representation of data type and value, using data type transformation and data value derivation for certain views (e.g., a quantitative result within normal reference ranges might be more succinctly represented nominally as ‘normal’)  Appropriate representation of data fields, using data field rules if appropriate for certain views (e.g., multiple test components might be represented as a single aggregated set) |
| **Clinical Usability** | **Visual mapping**  Supports appropriate use of the x- and y- planes of the spatial substrate (i.e., the use of timelines or visualisations that reflect clinical workflow, the appropriate level of data density) and additional techniques such as alignment, folding, recursion and overloading (e.g., grouping of related data in the design of bespoke layouts for DoOO domains)  Supports appropriate use of connection and enclosure (e.g., connecting an abnormal test result with its subsequent treatment)  Appropriately utilises the retinal variables: shape, colour, texture, position, size and orientation (e.g., red to denote ‘abnormal’, or the use of glyphs to visualise common tests) |
| **Clinical Usability** | **Interactivity**  Appropriate use of user-controlled interaction techniques, for example as described by Shneiderman in the ‘Information seeking mantra’: *overview first, zoom and filter, then details-on-demand* - through hyperlinks, on-screen controls, filters, hover-over, tool tips and panels |
| **Input of data** | **DoSO templates**  DoSO input should be in the format of user-defined, structured templates as well as modular DoSO components.  DoSO data fields should be appropriate to clinical need (see Section 1, ‘DoSO domains’).  DoSO templates (or components) should provide options for documentation in appropriate format(s) (e.g., free text, date field, drop down, multi-select, radio button etc.).  DoSO templates should provide functionality to support flagging of key data items for future reviews (e.g., drug allergies, safeguarding concerns, behaviour alerts, translator requirements).  DoSO templates (or components) should be able to be added mid-consultation (e.g., patient attends for an STI screen but also needs emergency contraception).  DoSO templates (or components) should be as an automated response in appropriate clinical scenarios (e.g., age<18, safeguarding or gender (contraception/menstrual history).    The automated availability of patient information resources in response to clinical diagnoses as they are documented (e.g., specific health advice following a clinical diagnosis of herpes).    DoSO templates should offer the visual documentation of clinical examination findings by annotatable anatomical diagrams.    The EHR vendor should support bespoke DoSO template design, with rapid deployment to clinical services.    Users with appropriate system rights should be able to create, edit and configure DoSO templates (or components) via an intuitive, user-friendly interface.    The EHR vendor should maintain an up-to-date repository of example DoSO templates (or components) in use by other clinical services that are freely available for testing and adoption / adaptation by other services.  The EHR vendor should hold regular user-group meetings/events to discuss and iterate the design of commonly used DoSO templates (or components) |
| **Input of data** | **Simultaneous data entry and review**  Data entry must be possible at the same time as review of clinical data (DoSO and DoOO)  Pull-through of previous DoSO during data entry (only where appropriate), without having to leave the current window, with the option to confirm, update or replace:  - from previous (historical) consultations (i.e., minimise repeat questioning from previous visits).  - from the current (same day) consultation (i.e., minimise repeat questioning from the same clinic visit).  - pull-through should continue to flag key data items from prior reviews (e.g., drug allergies, identified safeguarding concerns, translator required). |
| **Clinical digital affordances** | **Embedded links**  Automated or user-selectable, to the following features when appropriate:  - relevant clinical guidelines (e.g., UKMEC, BASHH and BHIVA guidelines)  - risk score calculators with alerts (e.g., QRisk, FRAX, BMI)  - patient information resources (to printer or by shareable link)  - patient communication (SMS, PHR)  -scheduling for future services required (e.g., vaccinations, contraception expiry, repeat prescriptions, physical, cognitive and mental health assessments) |
| **Clinical digital affordances** | **Automated prompts and alerts**  Automated setting of prompts, at appropriate intervals, for future services required (e.g., vaccination schedules, expiry dates, follow-up dates, physical, cognitive and mental health assessments, with appropriate responses according to patient's reported condition or symptoms  Fully/partially automated calculation of risk scores utilising key data items available within the clinical record |
| **Clinical digital affordances** | **Automated coding for diagnosis and service provision**  Automated coding from clinical record entries, including test requesting (e.g., Herpes testing auto-codes as T5/relevant SNOMED code), provision or review of a contraceptive method (e.g., implant insertion applies relevant SRHAD code) and prescribing information (e.g., PrEP autocodes such as O31, O41, O53 / relevant SNOMED codes etc.) |
| **Clinical digital affordances** | **A list of recently-accessed patient records**  A list of recently-accessed patient records for each user, to enable review of patients recently seen |
| **Clinical digital affordances** | **Artificial and Augmented Intelligence**  The use of Artificial Intelligence (AI) or Augmented Intelligence, where appropriate, to support clinical practice (e.g., diagnostic algorithms, clinical queries, finding relevant research evidence, **transcription of dictated case notes, organisation of images and files,** patient support and communication) |
|  | **Supports collaboration between clinic staff** |
| **Supporting Collaboration between Clinic Staff** | **Situational awareness of patients currently ‘in clinic’**  Reception staff able to record easily visible triage information when booking in patients  Service-defined reminder system to prompt staff to check and update demographic information e.g., address details, gender identity, particularly if information is absent from the record  Real-time waiting room showing patient appointment details, triage information, arrival and derived wait time, and appointment notes (e.g., patient has left department to put more money on the car)  Electronic check-in for appointments via dedicated kiosks  Electronic check-in via patients’ personal devices (e.g., smartphone)  Track/locate patients within the service via information from the EHR  Track/locate clinicians within the service via information from the EHR  Flag or set a patient alert/reminder visible to all staff when the record is opened in clinic  Flag or set a patient alert/reminder only visible to restricted users/user groups when the record is opened in clinic |
| **Supporting Collaboration between Clinic Staff** | **Collaborative care of patients currently ‘in clinic’**  Support rapid change logout / login between users on a single workstation (e.g., to document second opinions or facilitate the handover of complex patients)  Multiple clinicians able to open/view a clinical record at the same, with overwrite protections applied to individual clinical template data fields (i.e., ensuring two active users cannot edit a single template field concurrently)  Send confidential messages within the EHR to other active users  A real-time message board to enable active users to receive asynchronous handover of key events in clinic that day |
|  | **Collaborative care of patients not necessarily ‘in clinic’**  The ability to set time-defined recalls to prompt clinical review (e.g., write next prescription in 5 months’ time, vaccination due dates).  System supports the generation of bespoke task lists – these task lists can be generated automatically from recalls, but also can be created and edited by system users.  The ability for task lists to be collaborative between multiple concurrent system users.  The ability for individual users to maintain their own personal patient lists (e.g., recent, patients of interest, patients requiring follow up, patients whose results need reviewing.    Enter patient messages (emails and SMS) to be sent at a later specified date.    Automatic generation of a pattern of service-defined recalls at defined frequencies (e.g., at 3, 6 and 12 months when a syphilis diagnosis code is applied).  The ability to generate referral letters for onward referrals outside the ISH service. |
| **Appointments** | **Patient identity**  Automated generation of service-defined patient ID numbers/codes at time of demographics entry.  Ability to record patient NHS numbers, as well as ability for patients to opt-out of documenting their NHS number.  Automated generation and attachment of correct soundex codes to patient records at time of new patient record creation.    Inclusive gender options available for patient demographics, including trans and non-binary – *see BASHH recommendations for integrated sexual health services for trans, including non-binary, people 2019*: <https://www.bashh.org/media/4400/bashh-recommendations-for-integrated-sexual-health-services-for-trans-including-non-binary-people-2019pdf.pdf> |
|  | **Appointment creation**  Available appointments should be easily identifiable by date, time, clinical service(s) required, consultation modality (e.g. face-2-face, video, telephone, other), clinician and appointment length – both by search and diary view.    The booking should record the source of the referral and reasons for attendance.    Future appointments booked should be visible whilst the booking process for a new appointment is ongoing.    Flag certain patient characteristics which are visible to all users e.g., communication difficulties, previous patient aggression, under-18s. |
|  | **Appointment management**  Print customisable patient details labels e.g., Name, DOB, patient number  Capture of cancellation data including who cancelled the appointment and reasons for cancellation.    Capture and report DNA rates.    Provide service-defined automated DNA strategies (e.g., DNAs automatically applied if >30 mins since appointment time, automated SMS sent to inform patient of next steps following DNA). |
|  | **Appointment error and data duplication safeguards**  Ability to merge duplicate patient records, with in-built error checking.  Patient numbers must not be duplicated, even if the number has been previously merged or deleted.  Allow for potential implementation of a new/updated patient numbering system, with a legacy link to prior patient numbers used in the service.  Link to national GP database to ensure accuracy of GP details in the patient record, including the function for no allocated GP or pooled lists; also to include capture of GP contact email addresses.  Record, flag and share patients’, service users’, carers’ and parents’ information and communication needs in keeping with the NHS accessibility information standards.  <https://www.england.nhs.uk/wp-content/uploads/2017/08/accessilbe-info-specification-v1-1.pdf>] |
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| **Communication with Patients** | **General principles**  Confidential storage of patients’ contact details: - Postal address[es]  - Telephone number[s]  - Email address[es]  Ability to clearly denote and as a result restrict communication via these routes according to patient preference.  Automated blocking of process when system users attempt to use a method of communication that has been declined by a patient e.g. email generation blocked when staff attempt to use email within a record of a patient who has declined email contact.  Fully incorporated postcode lookup system, with auto-completed address details, which is regularly updated. |
| **Communication with Patients** | **SMS**  Integrated 2-way SMS communication.  Patient SMS reminder functionality to include date, time, modality, location (if relevant) and option to reply to cancel / reschedule.  Ability to generate automated messaging based on service-defined parameters (e.g., automated SMS for negative results). |
| **Communication with Patients** | **Letter and email**  Supports:  - Integrated clinical letter writing, editing and printing.  - Voice recognition software for letter writing.  - Integrated email writing, editing and sending.  - Integrated PHR message writing, editing and sending.  - Auto-completion of clinical and administrative information sections within patient communications (e.g., results, prescriptions. plan, GP details, referral details).  - The generation and subsequent use of standard letter templates. |
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| **Online** | **Online booking**  Intuitive online booking process with seamless integration into service websites and online triage, test kit, contraception and condom provision  Checking process within the online booking system to assess for existing clinical records on the EHR, including highlighting records with similar details  Clinic ID assigned to patient at the point of booking, with identification of existing clinic ID to avoid duplication - Once assigned the booking system can inform patient of this ID - via direct display, SMS and/or PHR  Clinical triage within the online booking process, to define the service need and therefore appointment type  Adaptive booking process and displayed information according to patient characteristics (e.g., ability to change page language, easy-read option)  Adaptive appointment duration appropriate to service needs (i.e., if contraception and sexual health needs identified then a longer appointment is booked)  Adaptive appointment type appropriate to service needs (i.e., if contraception and sexual health needs identified then the patient is assigned to a clinic with a dual-trained professional).  Adaptive appointment requirements according to special requirements (i.e., if an interpreter is requested a longer appointment is booked)  Booking process permits patients to choose their preferred clinic location(s) and/or consultation modality for review  Patients can amend, cancel or add clinical detail to bookings made online - via PHR and/or SMS technologies  Patients can amend, cancel or add clinical detail to bookings made over the telephone - via PHR and/or SMS technologies  Patients can amend, cancel or add clinical detail to follow-up appointments booked at a prior clinic visit - via PHR and/or SMS technologies  System populates EHR, including clinical templates, with information completed during online triage  Online booking process meets current UK public sector accessibility regulations  Public Sector Bodies (Websites and Mobile Applications) (No. 2) Accessibility Regulations 2018,  <https://www.gov.uk/guidance/accessibility-requirements-for-public-sector-websites-and-apps>  <https://www.gov.uk/guidance/make-your-website-or-app-accessible-and-publish-an-accessibility-statement>  Web Content Accessibility Guidelines (WCAG) 2.1 level AA compliant] |
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|  | **Online services**  Patients self-triage for clinical needs.  Patients able to self-assess for contraceptive contraindications, with this information linked to their EHR record.  Patients able to request postal STI testing.  Patients able to request and receive oral and barrier contraception methods via a flexible and service-defined history taking and management algorithm.  Incorporation of integrated, or API integration with external provision of, video consultation functionality.  Incorporation of integrated, or API integration with external provision of, webchat functionality. |
| **Online** | **Personal Health Record (PHR)**  Easily accessible web-based portal (personal health record – PHR) for patients which communicates in real time with the EHR, either via direct provision and/or by facilitating secure data exchange with a third-party provider (e.g., Patient Knows Best.  PHR enables patients to amend demographics and make/change/cancel appointments.  PHR enables patients to review and share (should they choose) previous investigation results.    PHR enables patients to present key treatment dates e.g., LARC fit dates, syphilis treatment dates, ART initiation and switch dates via this patient portal (service-defined).    PHR enables patients to complete a clinical history online which imports to draft clinical templates ready for an upcoming clinical review.    PHR enables patients to securely upload images.    PHR enables patient-led Partner Notification with real-time updating of the EHR documentation.    PHR includes patient messaging system, to individual or groups of clinic staff.  Patient portal to meet current UK public sector accessibility regulations  Public Sector Bodies (Websites and Mobile Applications) (No. 2) Accessibility Regulations 2018,  <https://www.gov.uk/guidance/accessibility-requirements-for-public-sector-websites-and-apps>  <https://www.gov.uk/guidance/make-your-website-or-app-accessible-and-publish-an-accessibility-statement>  Web Content Accessibility Guidelines (WCAG) 2.1 level AA compliant]  A person-centred approach must be taken to all patient-accessible areas of the platform; wherever possible (via clinics or national bodies) including patient-users in the co-design and review of these components of the platform  A user interface which adapts to the user’s device e.g., appropriate desktop / smartphone / tablet screen size and functionality adaptations  Portal to adapt according to patient characteristics e.g., ability to change page language, easy-read option  Robust security complaint with NHS Digital standards  Robust two-factor authentication for access to patient portal |
| **General Interface Requirements** | **Digital Technology Assessment**  System platform meets the Digital Technology Assessment Criteria for health and social care (DTAC [https://www.nhsx.nhs.uk/key-tools-and-info/digital-technology-assessment-criteria-dtac/])  System speed must not be affected by the number of active users  Fast load times between sections of the EHR: ≤2 seconds for all functions including moving between system views, opening patient records, and opening clinical templates |
| **General Interface Requirements** | **System availability**  Web-based program – able to run on all commonly used browsers.  Able to run a variety of devices - desktop, laptop, smartphone, tablet |
|  | **Accessibility**  Meet accessibility criteria within digital technology assessment criteria (DTAC)  Minimal use of colours taking colour vision deficiency into account  Adaptive font size / screen resolution to allow for users with poor sight, without loss of key information outside of the borders of the monitor/screen  System to support a high contrast mode  Voice activation |
| **General Usability** | **Ergonomics of user interface**  EHR development teams should include team members with experience of, and/or seek external review for, iterative design of the ergonomics of the user interface.  Display settings to allow the user interface to adapt to variable screen diameters.  Screen sections should be variable adjustable to suit the users’ preferences.  Use of background/font sizes/colours to distinguish clearly between template and clinical data.  Clear visual indication of mandatory fields on screen.  Clear identification of “copy previous” contents using a specified colour or font characteristic.  Free text fields in clinical templates to expand to fit the amount of text being entered.  Patient demographics to be clearly visible on every screen in a header.  Standard exit/save/edit button functionality and location on all screens.  Tab/Menu/Relevant data button text to go bold or change colour to indicate when underlying data exists.  Maximum functionality on a single screen (taking into account number of items, sizes, visual clarity, screen resolution) to minimise moves between multiple screens/sections and mouse clicks. |
|  | **Keyboard and mouse functionality**  Both keyboard shortcuts and mouse right-click functionality should be available to cut, copy and paste within the clinical record.  Consistent use of hover/single/double click functionality.  Keyboard shortcuts within the diary and recall setting should be available (e.g., ‘t’ for today; ‘+1w’ for in one week). |
|  | **System response when inputting clinical data**  User-defined abbreviations that can expand when entered into free text fields, e.g., “M” for male and “F” for female.    Use of ‘canned phrases’ within the clinical record (i.e., pre-set common phrases activated by user-defined abbreviations / acronyms).    System to support reactive spell-check functionality.  An auto-save function during the completion of clinical templates. |
|  | **System upgrades**    System upgrades to be applied out-of-hours  Allow for end-user testing via a testing environment prior to launch and prior to any upgrade or EHR iteration  System upgrades should be beta-tested with a network of clinical users prior to wider implementation / adoption in the EHR |
| **System Administration** | **User management**  Service able to add, edit and delete users.    Service administrators can reset passwords and unlock user accounts for staff.    Service administrators can reset passwords and unlock user accounts for patients with PHR accounts.  System supports links with local / trust / provider defined single sign-on solutions.  System supports sign in utilising NHS Smartcard authorisation.    System functionality defined by user groups and individual user profiles.  Ability to control system access according to the physical location of the user.  System Manager should at any time be able to view the activity of any user from a master system administrator interface.    System Manager to be able to access a visible and reportable audit trail of any adding/editing/deleting of users and the frequency of password resets.  System able to print user / role lists to support audit management. |
| **Data Analysis and Reporting** | **Data analysis**  Compliance with essential national reporting systems (e.g., GUMCAD/SRHAD/HARS/CTAD/SWS/NaSH) – *see BASHH standards for the management of STIs 2019:* <https://www.bashh.org/about-bashh/publications/standards-for-the-management-of-stis/>    New mandatory data requirement functionality must be available prior to the mandatory upload period to enable testing of data extraction to be carried out.    When installed in English sexual health services, system must be compliant with the most recent iteration of all mandatory reporting systems eg. GUMCAD (currently version 3).  Quality of coding assured by the use of algorithmic and rules-based validation checks on closure of clinical templates.    Provision for standard HL7 compliant interface through an up-to-date recognised API.  Reporting supported in various appropriate data formats. E.g., CSV, Excel, XML  Fully support the output of all recognised SNOMED codes.  Standardised terminology and data name formats to be used throughout the record system.  EHR provider should be engaged with the BASHH/FSRH Information Group, keeping up-to-date with planned changes in national clinical coding guidance.  EHR provider must provide a regularly updated and validated data dictionary and database relationship to facilitate offline data manipulation outside of the system.  Locally agreed coding able to be defined and added by the service e.g., for any additional or adaptive reporting requirements.  Quarterly system updates when deployed in English or Welsh sexual health services, with the latest ONS LSOA codes as they are released by ONS. |
| **Data Analysis and Reporting** | **Data reporting**  System must be compliant and updated in line with required reports for national surveillance strategies.  A user-driven reporting tool with intuitive functionality to support data analysts to write and review new reports in real time.  Supplier must provide clear documentation as to how to use the reporting tool, tables and functionality of the system to support analysts generating bespoke reports.  Generation of reports on diagnosis and activity codes e.g., using SRHAD, GUMCAD, HARS, SWS, NaSH coding.  Fully automated generation of required national surveillance reporting, including upload of reports to relevant national organisations.  An aggregated summary of surveillance data that users can easily understand e.g. presenting the individual numbers of patients (by gender, sex ori, age etc) consultations, tests, diagnosis etc so users can easily assess whether surveillance data are accurate before submitting.  Integrated service-defined data quality checking processes.  Collated reporting for individual patient episodes i.e. system delineates episodes of care and collates all relevant coding within that reported episode.  Automatic generation of reports on attendance, including tracking this data over time. This includes DNA rates, time to next available appointment etc.  System provider must work with and provide the ability to generate reports for agreed tariff pathways e.g. pathway analytics.  Support easy delineation of clinical activity that is charged outside an agreed core sexual health contract e.g., HIV outpatient activity, cervical smears, psychological therapy. |
|  | **An auditable trail**  A full audit trail including tracked changes by date, user and user location |
| **Data Governance** | **Data import / export**  Full import and integration of data/results from postal testing providers.  Export of clinical documentation for medicolegal requests, producing documentation in an appropriate format.  Facilitate data migration from an existing or previous EHR provider, including the ability to search by legacy identifiers from that database. |
| **Data Governance** | **Data management**  Compliance with FSRH Guidance on Service Standards for Confidentiality in Sexual and Reproductive Health Services 2020: <https://www.fsrh.org/standards-and-guidance/documents/fsrh-service-standards-for-confidentiality-in-srh-services/>  Compliance with the Consensus Statement on Confidentiality in Sexual and Reproductive Health and HIV Services – emailed re ref ??in public domain yet.  EHR provider should complete and ensure compliance with the NHS Data Security and Protection Toolkit.  Siloing of data to permit clinical records for some patients to only be reviewed by certain staff groups or staff location. |
| **Data Governance** | **Data security**  Passwords stored in encrypted form.  Easy extraction of data for subject access requests.  Access for remote working at outreach services, and via VPN  Encryption of patient ID data – provided by a recognised supplier – Microsoft, Amazon Web Services etc.  User timeout function after a period of non-activity, with the duration to timeout set by the individual service  Ability to protect inappropriate access by some staff members to patient data or images by use of a “need to know” function |
| **Data Governance** | **Data archiving**  Compliance with BASHH Guidance on the Retention and Disposal of Clinical records 2016: <https://www.bashh.org/media/2608/bashh-guidance-on-the-retention-and-disposal-of-clinical-records-2016-update.pdf>  Compliant with NHS Records Management Code of Practice: <https://transform.england.nhs.uk/information-governance/guidance/records-management-code/records-management-code-of-practice-2021/> |
| **EHR vendor relationship** | **Costs**  Modular structure to EHR, with associated adaptive costing.    Costs to make the EHR compliant with nationally mandated clinical and reporting requirements should not be passed to the clinical service.    Licencing costs should be attributed to either individual or concurrent number of users. |
| **EHR vendor relationship** | **Technical support**  An easily accessible digital and telephone helpdesk  Prompt turnaround times for service requests - please indicate your average resolution times  Openly share common service requests / system errors with users, evidencing fixes for these issues and supporting users to access said fixes  Support services via the co-development of a business continuity plan in case of EHR downtime  Evidence data recovery and backup processes for clinical data  Evidence available user training and support packages, both at system set up and on a rolling basis throughout the duration of the agreed supply contract  Provide support to services via the co-development of an offline plan  Active collaboration with clinical laboratories, identifying and resolving known issues with lab links. |
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| **EHR vendor relationship** | **Future roadmap**  An active development roadmap  Evidence active engagement with sexual health services to drive EHR development  Evidence active facilitation of user groups and ideas sharing  Facilitate engagement (via clinics or via national bodies) with patient user groups and involve them in the co-design of patient-facing services such as a PHR  Survey for and reduce duplicate working at clinical sites, encouraging networked co-development between services with shared objectives  Evidence attendances to clinical sites to review their system in use by users  Maintain a high-quality interactive website to which users can login, containing key issues such as known software problems, incoming upgrades, and dates for fixing common bugs  Consult and engage with experienced sexual health clinicians and data managers regarding the design and testing of major system changes and upgrades |