

Title: Climate-HIV Case Study**Author: Keith Roberts****The Project**

CareSolutions™ Climate–HIV is a specialised electronic patient record (EPR) system for HIV medicine. Designed by clinicians for clinicians at North Middlesex University Hospital Trust in London, Climate-HIV follows the clinical work streams of HIV teams to support efficient, multi-disciplinary, patient-centred care. Climate-HIV makes it easier and safer to assess and document patient encounters, prescribe medication, write clinical letters, code diagnoses and generate local and national reporting e.g. the HARS Dataset which will soon determine funding tariffs for the HIV service.

Client Information

North Middlesex University Hospital NHS Trust operates a busy acute general hospital serving the communities of the London Boroughs of Enfield and Haringey and surrounding areas. It serves a diverse and, in places, highly dependent population of approximately a quarter of a million people. The local HIV prevalence is amongst the highest in Britain. With over £200m invested in the Trust in the last five years, the hospital is currently in a very dynamic state of growth and development. It is a preferred training location for physicians and nurses. The Trust has nationally recognised specialist services in haematology, cancer and HIV.

Background and Requirements.

Public and corporate demands for accurate data grow year by year (PbR, CQUINs, QIPP, EMA2 requests, etc). The government has declared its intention to focus on clinical outcomes whilst cutting 45% off management costs in the NHS. Payment by Results (PbR) tariffs for HIV outpatient care are due to be introduced and will require more detailed patient data to be submitted by treatment centres.

HIV services in the UK are struggling to meet these data demands as the majority of centres are still using paper records. There are a few commercial HIV electronic care record (ECR) systems, largely add-ons to GU medicine systems, which are not considered comprehensive enough to address the complex and sometimes chronic nature of individual HIV patient care. Generic hospital-wide ECR systems are not currently considered fit for use in such a specialised field as HIV medicine. This is

compounded by the fact that most hospitals use a series of unlinked specialised databases including pharmacy and pathology systems.

Specialised Commissioners in NHS England are now promoting the creation of regional managed clinical networks or other forms of co-operation between HIV centres and units. More and more, shared clinical data will be at the core of such collaborations.

North Middlesex HIV Services, along with other Trusts, faced increased costs involved in meeting the new data requirements e.g. HARS. Because this extra data consolidation was being carried out by senior nurses or in-house IT staff, the costs were escalating and perpetuating the hidden inefficiencies of a loosely co-ordinated state of care.

Dr Achim Schwenk had realised many of these difficulties as far back as 2005 when he created his own database in an attempt to improve the HIV Service at North Middlesex. From this early beginning, he continually improved the capability and facilities with this database until he realised that to maintain all the new requirements previously described, he needed to update his solution. This was the start of Climate-HIV. 6PM were enlisted to modernise the technology being used, provide a robust solution and restructure it for the NHS requirements going forward.

Climate-HIV Solution

What does Climate-HIV do?

Climate-HIV is an 'HIV Clinic in a Box'. Having all the Trust's patients' data in an EPR system provides all the HIV Clinic team members with fast access to patient data, helps to educate patients, greatly reduces the administration functions, e.g. GP letters and referrals, and records all the patient information in one place. All audit and quality measures are incorporated automatically to ensure improvement of the service throughout the care pathway. This includes the automatic creation of the HARS dataset which will be mandatory for services commissioned by NHS England, and managed by Public Health England by 2014-15. Climate-HIV is the only solution currently tested to provide this.

It is accessed via a Web browser therefore no additional client software installation is required and any nominated user can access the system from any NHS computer. Additionally, this provides for a simplified maintenance program and easy administration of updates as required. The solution interfaces with Patient Administration, GUM and Pathology systems and has essential built-in data quality checks.

Benefits

Key benefits to Trusts using the Climate-HIV solution are:

- Instant intervention in patient treatment.
- Single screen overview enables instant view of all relevant data needed during patient consultation. This has improved clinician efficiencies by 20-30%.
- A structured and up-to-date centralised data set, which revolves around the patient.
- Web-based interface allowing ease of use and instant access to patient details.
- Information traditionally recorded on paper can now be entered electronically, at the point of patient care.
- Complete audit trail of all activities undertaken.
- Enhanced information extraction to facilitate decision support.
- Consistent data quality across the Climate-HIV system.
- Accuracy of clinical data provides for correct coding of many aspects of patient care, ensuring that clinical activity is appropriately remunerated and easily accessible.
- Automatically generates letters to GPs, referrals and medico-legal reports, populated with patient data from Climate-HIV.
- Collects accurate time-stamping of patient's critical care pathway and collates data to create a reliable audit report required by the NHS.
- Flexible parameterisation of reference data to support business change.
- Sharing of information between various sites as the solution is configurable per site whilst patient-identifiable information remains fully protected per individual site.
- Where regional clinical networks are built, as requested by NHS England, Climate-HIV is technically ready to support joint collection of clinical and commissioning data.
- Climate-HIV documents patient encounters and clinical discussions both as free text and in a structured format for HIV specific topics (including adherence, cardiovascular risk, etc).
- Appointment planning and clinic management, including "queue busting" monitoring of waiting times, and internal referrals to other members of the multidisciplinary team.
- Ordering of diagnostic tests with a list of guideline recommended tests according to rules that are based on current BHIVA guidelines and can be locally reconfigured
- Climate-HIV makes best use of the ICD-10 and SNOMED-CT coding systems for diagnoses, findings, conditions and actions in healthcare that are and will become NHS standards. This enables clinicians to document the patient's 'story' in everyday language and quickly choose

the best SNOMED-CT category where needed via an intuitive user interface to give an enhanced diagnosis. Because SNOMED-CT will be a mandatory requirement in 2015, this ensures the solution is 'future-proofed'.

- Creates clinical letters with a Microsoft Word interface, allowing the editing and saving of individualised letters based on a suite of predefined pro-forma letters. This greatly reduces the cost of clerical input time and possible data errors.
- Electronic or paper-based prescribing which identifies patient's medication 'run-out' dates, duplication, delayed or non-delivered prescription and actual prescribing costs to assist pharmacists and management.
- Sophisticated security model and role-based access for optimal data protection based on Microsoft's Active Directory.
- Based on Microsoft .NET web technology, i.e. accessed via Internet Explorer without the need to install additional software on front end computers.
- Capability to interface with other hospital systems including PAS for patient metadata and appointment planning, pathology, diagnostic imaging reports and pharmacy. Climate-HIV enables this via a built-in version of CareSolutions™, a sophisticated data warehouse system created by 6pm Ltd.
- Documentation and monitoring of patient's privacy choices (such as writing to their own home address, their GP, etc.).
- Incorporates a data reporting system with a series of pre-configured and locally configurable queries for commissioning, performance monitoring, research, data quality and clinical audit.
- Climate-HIV was recently successfully used as the pilot system for the Public Health England's end to end testing of the HARS dataset.
- Promotes and enables participation in UK-CHIC, the UK-wide cohort study run by the MRC.
- Centres can participate in a secondary data use programme that provides anonymised, high quality data to third party providers (e.g. Pharmaceutical industry). This enables the Trust to be part of a self-funding programme for the purchase of Climate-HIV and to generate an on-going revenue stream.
- Comprehensive online help file, minimising staff training costs and on-going support.

Key Financial Drivers

- Reduction in the administrative burden allows clinicians to dedicate more time to patient care, improve the service and deliver improved patient outcomes. North Middlesex find it increases their capability by 20-30%.
- Inputting of data at the point-of-care negates the requirement for the duplication of activities or additional staff to transfer this data. This typically uses a minimum of two dedicated members of staff to undertake this task who can now be employed in more productive ways elsewhere in the Trust. The salary saving of one member of clerical staff will contribute significantly to the cost of the Climate-HIV solution.
- Complete control of the issue of HIV medicine reduces the number of duplicated, lost, etc. prescriptions and associated costs involved. Additionally, it records the medication for that period in the patient's care and assists both the pharmacist and management in controlling and monitoring costs.
- The ability to issue test requests in a precise and controlled way reduces the cost of unnecessary testing. It ensures that all specific tests required for a patient are undertaken in a timely fashion replacing wasteful 'blanket testing'.
- Accuracy of clinical data provides for correct coding and ensures that all associated clinical activity undertaken during essential patient care is captured, remunerated and delivered to the correct organisations.
- Key Performance Indicators are more easily achieved and all auditable information for local and national reporting is provided.

The HARS dataset and Climate-HIV

The HARS Dataset will inform the new Payment by Results tariff, particularly the assignment of patients to three levels of payment (new, stable and complex). The quarterly submission of HARS will replace the annual, much less complex SOPHID submissions. Trusts have reported that SOPHID took approximately one month to consolidate and required a dedicated data manager and associated clinical staff input to complete. Without Climate-HIV, the cost and effort for reporting would increase greatly from SOPHID to HARS.

Climate-HIV has been used for the HARS Dataset end-to-end testing by Public Health England and was built around its development. Climate-HIV generates the reports in the prescribed XML format at

a mouseclick and allows quick data validation. Failure to submit HARS data would leave Trusts exposed to losses of several £ million of associated HIV revenues, and to penalties for non-submission or poor data quality. Public Health England will use the shadow tariff period to refine their definitions of new, stable and complex, informing the final PbR tariff set by NHS England. It is in Trust's best interest to participate actively in the shadowing period, to ensure the full tariff implementation in 2015/16 does not leave them exposed to income loss. Clinicians and managers will wish to have full local control over their own activity data in order to protect their services.

Quotes

Trust Comments:

"All I need to see about my patient is on one screen –their CD4, viral load, treatment, diagnoses, allergies, resistance, even reminders of things to do. Whilst the patient is with me they have my full attention and after the consultation, the job is done in a minute."

**Dr Evangelos Vryonis, Consultant in HIV Medicine,
North Middlesex University Hospital NHS Trust**

Quote from Press Release by North Middlesex:

'Climate-HIV has been designed by clinicians at North Middlesex hospital with input from a number of HIV experts and organisations, including Public Health England. It has already been well received by a number of Trusts due to it being an 'HIV Clinic in a box' and its flexibility and quality output has made it a Public Health England compliant product for HARS submissions.'