



## CRX Customer Success

# National Health Service

The UK Government's National Health Service (NHS) employs more than 1.5m people, on average dealing with around one million patients every 36 hours. Spanning over five years, the Map of Medicine project is a major component of the UK's Connecting for Health IT program – one of the largest IT undertakings in the world to date, with an estimated budget in excess of €50 billion.

With information stored and accessed in Day's Content Repository Extreme (Day CRX), the Map of Medicine enables NHS staff to customise, create and share local pathways based on the latest evidence and guidance in the Map's national pathways. The Map is now a topic of discussion among other health providers across the globe.

## What is the Map of Medicine?

The concept of the Map of Medicine was devised by consultants for the NHS, who identified the need to make specialist medical knowledge available to community-based clinicians, to improve the quality of specialist referrals and decrease wait times. This led to the development of the Map of Medicine – an Internet-delivered, user-facing communication tool that allows evidence-based clinical information to be made available to medical practitioners. By allowing access at the point of care, the Map provides support to multi-disciplinary teams, promotes the sharing of expertise, and helps bridge the gap between primary and secondary care streams.

Described as a 'refresher' by experienced clinicians and as an invaluable knowledge resource for junior doctors, locum staff and multi-disciplinary teams, the Map of Medicine display application is currently open to over 300,000 clinical users in the NHS and many more worldwide.

The Map Management Suite, comprised of online and desktop tools, provides the ability to create, manage, update and monitor content at both national and local levels. The Map can be localized once deployed, enabling the specific needs of local communities and specialist clinical networks to be met by linking pathways to existing resources, adding to and changing Map content, and sharing the results. The Map currently has more than 400 pathways, ranging across the major specialties and representing the most commonly presenting conditions. Pathways typically cover diagnosis, management and treatment, as well as aspects of prevention, screening and rehabilitation.

Like the Map of Medicine user-facing application, the Map Management Suite stores and accesses content in Day CRX.

# A Revolutionary Solution

The Map of Medicine requirement was for a repository, rather than an off-the-shelf content management system (CMS). After evaluating all credible open source alternatives, Apache Jackrabbit was the chosen due to the feature-richness of the Java Content Repository (JCR) compared to a traditional database. In addition, the JCR standard (JSR 170) natively fulfills the following key requirements of the Map of Medicine project:

[Versioning, Transactions, Search](#)

[Hierarchical data storage with referential integrity](#)

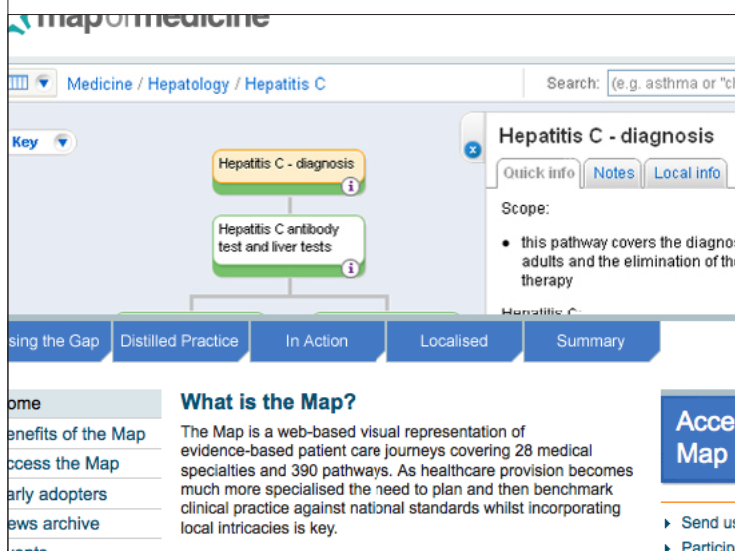
[Import & export](#)

Shortly after JCR implementation, the NHS realized the need for a strategic vendor-supported relationship, with the repository serving as the core component of the Map of Medicine system. Day CRX was the obvious choice, for its role as an enterprise-class, commercially packaged version of Apache Jackrabbit, and natively fulfilling the aforementioned project requirements. Day CRX is also enriched with unique enterprise features enabling high availability, reliability, security and desktop integration. In addition, Day CRX met the remaining key requirements of the Map of Medicine project:

[Synchronization support](#)

[High performance database persistence](#)

[Clustering/failover persistence](#)



These out-of-the-box features of Day CRX dramatically shortened development time during the project's implementation stage, and eventually Day's close association with the open source community meant accelerated learning and problem resolution.

The Map of Medicine content consists of structured XML documents, text, images and PDFs, with rich relationships between them. Content is versioned and exists within a localization hierarchy representing organizational and governance divisions within the healthcare landscape. Over 400 pathways is the equivalent of over 6,000 pages with binary attachments, localized over 60 local views, each with multiple releases. The total data volume is over 75GB.

The next steps are to investigate and deploy new features, such as enhanced performance persistence managers and active clustering, and also, further enhance performance and scalability by improving the approach to data modeling to take the best possible advantage of the JSR 170 feature set.

## Solution Features

[Pathway editing & publication](#)

[Clinical localization of content](#)

[Synchronization across multiple deployments](#)

[Complex content approval workflow process](#)

[Full content history and audit trail](#)

[Rapid application response times](#)

[High availability](#)

[Supports up to 500 concurrent editors on a single deployment](#)

## Solution Benefits

[Saves time re-inventing content, guidance and searching for the latest evidence](#)

[Supports health care planning](#)

[Easy to localize](#)

[Can represent pathways across all aspects of health or social care, facilitating coordination](#)

[Enables demand management including providing the right information to GPs to achieve more appropriate referrals](#)

[Helps deliver referrals to treatment targets](#)

[Provides knowledge support](#)

[Helps meet clinical governance standards](#)

[Supports professional training and development](#)

[When integrated with electronic patient records, appropriate clinical actions can be triggered directly from the interface.](#)