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The OFEK Health Information Network

For medical practitioners, missing clinical information is as much an everyday nuisance as hard reality. Current efforts to create health information networks (HIN) seek to directly tackle this problem. However, with a handful of exceptions, progress has been uneven. It may be several years before technically integrated, seamless and comprehensive networks emerge on a meaningful, global scale.

Today, Israel hosts what, by several measures, is one of the world's first integrated HINs.

Known as the Ofek Network, it extends to a total of 5 million people at 16 hospitals (8,100 beds) and 1,300 clinics with over 9,000 users. The figures are impressive: every year, users consult about a million patient records (corresponding to over 15 million pages of information) with average response time of below 10 seconds.] Ofek is growing and is likely to provide comprehensive national coverage across Israel in the near future.

Ofek's roots date back to 1999, when Clalit Health Service, Israel's largest HMO (with 14 hospitals and 3.8 million customers) began development of a Regional Health Information Organization (RHIO).

Clalit's challenge was a familiar one for healthcare IT managers across the world. Its patient data and medical information systems were disparate and heterogeneous. It had no fewer than 25 separate legacy systems for different facilities (lab, operating theatre, radiology, pathology, document management etc.).

Clalit began with a set of key objectives: a robust, user-friendly system providing access to a completely integrated medical record at point of care, in real-time, with strict security and privacy. On the technical side, it sought to define a minimal dataset to support sharing a patient's available medical information, a drill-down capability to the data - alongside a decentralised structure which maintained data in originating systems. The latter factor in particular addressed a major concern of IT managers everywhere - to avoid replacing existing systems. A further requirement was future-proofing: the RHIO would be upfront designed for scalability and flexibility to enable growth.

Clalit's RHIO objectives were buttressed by a clinical data integration pilot project at an affiliated facility, the Soroka Medical Center. Soroka shared the same strategic approach but had already implemented technology from Israeli medical informatics provider dbMotion to achieve its goals.

dbMotion's electronic health record (EHR) solution consisted of a Web-based product with no central database, no requirement to replace existing information systems, and no disruption to workflow during implementation. In essence, what it created was an EHR comprised of virtual patient objects, which aggregated information from disparate systems in different locations in an on-demand basis. The solution also featured additional functionalities such as patient-centric messaging, alerts, notifications, tracking logs, and auditing.

The dbMotion architecture was also proofed against any single point of failure in the network - allowing the system to function if a facility went offline (while indicating this clearly to a user/caregiver), and accommodated Clalit's privacy, security and performance requirements (turnarounds to queries in less than 10 seconds).

Crucially, implementation turned out to be transparent, straightforward and rapid (less than 12 months), with minimal training due to its Microsoft Windows functionality.

The Soroka pilot was extended across the entire Clalit HMO to create the Ofek network. In turn, Ofek's success has snowballed, to include two large government-owned facilities, Sheba Medical Centre and Rambam Medical Centre. This was accomplished in both cases in 3-4 months.

While the dbMotion solution is under implementation in the US and Europe, the Ofek network's success has led the Israeli government to consider creation of a national health information record to cover all its citizens, based on an RFI which uses Ofek as a template.

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