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Report on Exploratory Express on Electronic Health Records in Scotland

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Event detail (delete row if appropriate)	Express Exploratories at the eHealth Scotland-conference in Glasgow on the 1-2 March 2016 with the purpose of exploring the Electronic Health Records.

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The DHI KER-team ran two consecutive Express Exploratories at the eHealth Scotland-conference, which was held at the Golden Jubilee Conference Hotel in Glasgow on the 1-2 March 2016. The title of the conference was "Transforming care". Given the work the DHI have been doing on Next Generation Digital Records with the Scottish Government, we chose these, the Electronic Health Records, as the topic for the workshop.

Aaron Wood and Sanna Rimpiläinen from the KER-team, Miriam Fisher from the PMO team and Stephen Milne, the DHI Saltire fellow, ran the workshop.

The time available for the Exploratory was only 45mins, so the topic of the workshop was tightly focussed.

To inspire discussion and thinking around the electronic health record systems, the workshop started with a short, 10 min presentation introducing different electronic health record systems used around the world. These were divided into four generic categories:

- The so-called "closed systems" (operating on a closed or a proprietorial platform; e.g. Cerner Millennium, Epic)
- Open source systems (e.g. VistA)
- Cloud-based systems (e.g. Athena-health), and
- Systems utilising a Data Exchange Layer (e.g. Infoway in Canada; e-Archive in Finland and X-roads in Estonia)

The presentation gave a short description of each type of system on a very high level to provide information for the participants to work on.

Each workshop had ca. 40-45 participants. The participants were seated around five round tables, each accommodating 8-10 people. Each table had been allocated a role, either that of *a patient, a GP, a hospital, a SME, the Scottish Government and a community health worker*. During the first task, the tables were divided into two groups each. The first task asked the participants to consider, from the point

> **Q1: Which are the most important functions of an EHR from the point of view of your given "actor", and why?**
> **List 3-5 of the most important ones.**

of view of their allocated actor, which were the most important functions of an electronic health record system, and why.

The second part of the task entailed the two groups around each table coming together to draw up a joint list of three to five of the most important characteristics for an Electronic Health Record system from the point of view of their given actor. These were written on the flip chart. Finally, the groups were asked to identify the EHR-system(s), which might best correspond to their listed needs.

As the workshop progressed the participants commented that they could not actually pick the one type of system, as all of these had pros and cons. A number of participants also critiqued the description of the "closed system", as this did not correspond to their understanding of how, for example, Cerner Millennium operates. We realised that this issue was partially down to terminology used: what we meant by a "closed system" was a proprietorial system operating on a closed platform; not that the system was closed to the outside world. Partially this was down to trying to generalise a description from two different systems operating on a closed platform. The critique came from people who had worked for Cerner themselves and they pointed out that the Cerner software did have open API functionalities in places, that their interoperability with external software was good, and that the software could work on an open fashion. However, as an SME representative pointed out, even if a proprietorial software would in principle be able to interoperate with other systems and be able to make their software open source, they more often than not choose not to do so. The smaller software companies find it extremely hard to get the larger corporations to listen to them or their suggestions.

Results from the workshop

The functionalities or requirements for an ideal Electronic Health Record system elucidated by each group stemmed, naturally, from the demands emerging from their daily practices. Both groups representing the GP point of view required fast and mobile access to an up-to-date, reliable patient record feeding in real-time data and information from multiple stakeholders, including the patients themselves. They also wished for clinical decision support functionality, which would include alerts, and support for delivering the essential medicines list requirements. All of this should meet the GPs contractual requirements. These corresponded largely to the Community Health Workers' requirements. In addition to the description above, the CHW would like to see any recent activity the person being cared for has had with other services, such as social work or mental health services, and get risk alerts and personal alerts (such as "Vicious dog!"). They would also see the benefit from having an editable diary on a dashboard collating all relevant information relating to the person being cared for in one place.

The patient perspective produced requirements relating to easy and universal access, security and interoperability of the system and the capacity to share information seamlessly with the nominated parties.

Those approaching the topic from the hospitals' point of view wished to have information about the wider circle of care, i.e. which other parties are involved in the care of the patient. They also wished to have access to discharge information and clinical decision support in terms of signposting to specialist services, alerts for areas of concern and easy access to specialist advice relating to an individual patient. Furthermore, the system should provide an easily accessible, joint up view of data feeding in up-to-date, and whenever possible, real-time data and information from multiple sources.

The groups representing small and medium sized enterprises (SMEs) were concerned with establishing common standards for software development, including data and structure standards, open APIs, respect for IP, understanding the voice of the customer in the development process.

An ideal Electronic Health Records system from the perspective of those representing the Scottish Government would be affordable and cost-efficient, secure, and allow efficient information governance, which includes sharing, storing and retrieval of information, and access to analytics. The information available has to be timely and up-to-date. The system would be based on shared data standards and models enabling interoperability and easy scaleability. Public perception of the system was deemed important as well as having a defined procurement strategy. The system should also be implemented only once for multiple benefits.

At the end of both workshops we collated the main points to consider for an ideal EHR-system. The most pertinent points were:

- security/safety and reliability of the system;
- that the system would contain the full health and care record for a person;
- Interoperability and the importance of shared and public standards for use with the EHR;

Below is a table of all of the summary points from the two workshops:

Summary points, group 1. Qualities:	Summary points, group 2. Qualities:
• Data access and security * • Cost?? • Interoperability ** • Predictive health • Health and care • Easily accessible • Voice of customer –> user centred • Closed system issues <- IHE allows for sharing • Secure access • Real time updates • Clinical decision support	• Easy access and information transfer * • <u>Safe and reliable</u> • Full record – health and care *** • Data standards and security * • SME's -> difficult to play in closed platforms; • Work with SWAN-network (used in the NHS, and will be extended to other public services later) • Published standards * • Data governance and consent • APIs • Multicondition -> multiple access • Health economics -> predictive analytics • Summary record • Other conditions • Current state reporting