

HEALTH IN THE DIGITAL SOCIETY DIGITAL SOCIETY FOR HEALTH

16-18 OCTOBER 2017
TALLINN, ESTONIA

Use of Electronic Health Records (EHR) for identification of narrow patient populations

Tigran Arzumanov, Head of Sales, Clinerion



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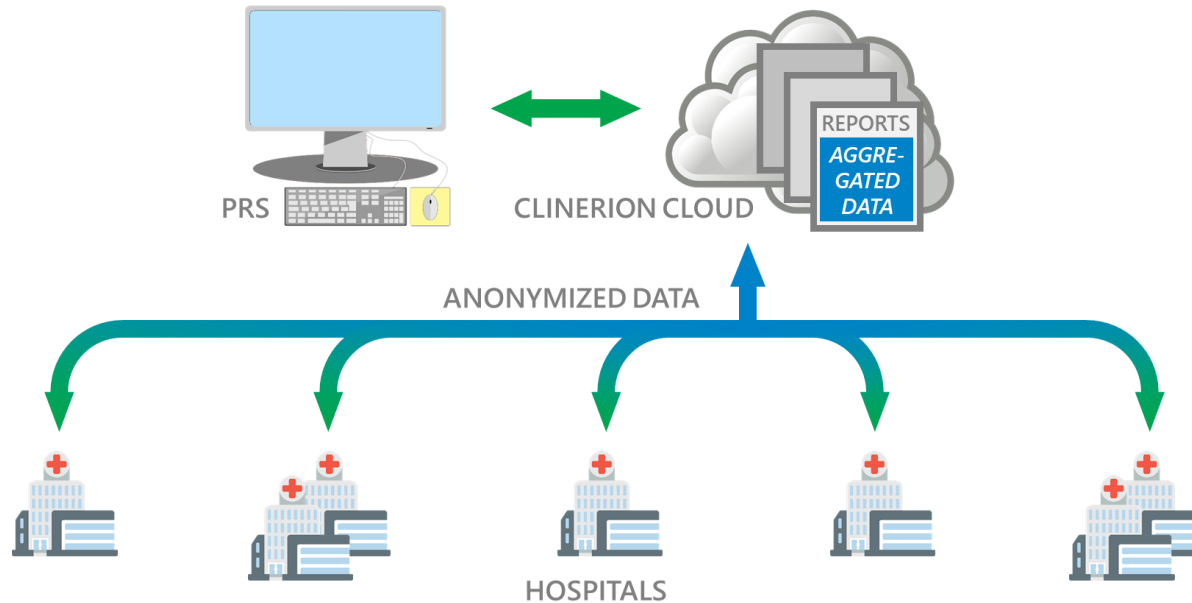
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CLINERION PATIENT RECRUITMENT SYSTEM FOR PERSONALIZED MEDICINE

- Precision medicine is the general case of personalized medicine
- Data is a key element in getting personalized medicine to work
 - How to cluster patients intelligently to find the groupings where a targeted treatment can impact a disease more effectively than a general cure.
 - How to find and identify these patients so that they can be offered the new treatment.
- Another key element is privacy legislation, as privacy is a double edged-sword.
 - At the extreme, excessive privacy may hurt patients.
 - Technical solutions ensuring privacy while not limiting patient access to treatment are of great importance.
- Clinerion Patient Recruitment System queries anonymized patient records across its network of hospitals and enables authorized hospital trial staff to re-identify eligible patients.

PATIENT RECRUITMENT SYSTEM ARCHITECTURE



LINKING BACK TO THE PATIENT: PSEUDONYMIZED DATA VS. ANONYMIZED DATA.

Pseudonymized data

- ⇒ Pseudonymized record selected.
- ⇒ Pseudonym sent to the hospital.
- ⇒ Lookup table with pseudonyms and Patient IDs.
- ⇒ Patient ID found.
- ⇒ Patient record found.

NEW: Anonymized data

- ⇒ Anonymized record selected.
 - ⇒ Record sent to the hospital.
 - ⇒ Record compared with source database.
 - ⇒ Patient record found.
- (Patent protected process.)

A new, proprietary technology for search and identification of patients for clinical trials within trial sites, using fully anonymized electronic patient data.

NEW ANONYMIZED IDENTIFICATION (ANID) TECHNOLOGY – HOW DOES IT WORK?

Anonymization (inside hospital's infrastructure)

- Remove all personal identifiers ⇒ anonymized record.
- Calculate a storable string (e.g. using a checksum routine).
- Encrypt the string.
- Encrypt the original database identifier of a patient record.
- Hospital stores encrypted values.

Re-identification (by authorized hospital staff)

- Storable string recalculated based on returned anonymous record.
- Retrieval of original Patient ID by matching strings.

Maintaining continuity for longitudinal studies

- Hospital and PRS maintain latest update of the anonymized record.

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THANK YOU

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