

Development of an automated system for clinical study recruitment

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Introduction

The AFTER AKI study was developed to evaluate implementation of a clinical decision support initiative for acute kidney injury patients. Recruitment relies on staff observing changes in serum creatinine, discussing the study with patients, and then alerting study personnel for consenting patients – a process that misses many eligible patients.

Objectives and Approach

To improve the efficiency of patient recruitment, we sought to develop an automated system to alert nurses on participating wards when patients on their wards met the study criteria with minimal risk of a data breach. To accomplish this, data from several databases were linked:

- Calgary Laboratory Services (CLS; a subsidiary of Alberta Health Services (AHS))
 - Data refreshed daily to capture serum creatinine labs
- AHS Analytics Data Warehouse
 - Admission/Discharge/Transfer (ADT) data to determine patient location in hospital on previous day
 - Discharge Abstract Database (DAD) to exclude patients with prior renal transplant

Results

The data were linked using the following process:

1. Daily procedure scheduled to flag patients who met the lab criteria on the previous day using CLS laboratory data.
2. The identified patients were located by hospital and ward using ADT data, and to exclude patients with a prior renal transplant. Only non-transplant patients located one of the study wards were retained.

3. Cumulative patient list updated with new patients and dates.
4. Tableau report created and securely released to ward clerk to enable clerk to view new patients each day for their assigned wards and discuss study with them as an impartial third party.
5. Consenting patients can then be approached by study personnel to discuss in more detail.

Conclusion/Implications

A system was successfully created to enable an automated process for patient identification in a clinical trial. Patient privacy was protected by applying user-level security when disseminating reports to ensure that only health care providers within a patient's 'circle of care' had access to necessary information.

