SMASH!

The Salford Medication Safety Dashboard

Why?

A recent study in English general practices identified prescribing errors in 5% of prescription items, with one in 550 items containing a severe (potentially life threatening) error[1]. Other studies have shown that prescribing errors in general practices contribute to one in 25 hospital admissions[2], and the costs to the NHS are about £500 million per year[3]. GP systems that try to block this via use of in-consultation pop-ups are frequently limited by "alert fatigue". An alternative paradigm is to use electronic audit and feedback (AF) systems or dashboards to present results to clinicians after the event to allow review, and hopefully change. Despite the widespread usage of such dashboards there exists little evidence as to what factors contribute to their success or failure.

What?

The Salford Medication Safety Dashboard (SMASH) analyses patient records and uses advanced algorithms to detect patients who may be at risk due to the medication that they are receiving. A nightly data feed from all GP practices in Salford, together with some secondary care data get sent to our secure servers. The data is then processed, validated and analysed to produce a daily report, allowing health care professionals to always view up to date information. The reports contain lists of NHS number which are available to health care professionals (GPs, pharmacists) via an intuitive web interface; they can then decide whether to take further action. The indicators are based on the widely adopted PINCER standard which has been shown to reduce prescribing errors in a cost-effective manner[4].

How?

The effectiveness and utility of SMASH is currently being evaluated in a trial. Each recruited practice is approached by a pharmacist who introduces the dashboard and explains the importance of the indicators. The practice is then followed for 12 months, during which time we track all interaction with the dashboard down to individual mouse clicks and hovers. This invaluable source of data, combined with the qualitative data obtained from interviews, will enable us to provide a list of best practice recommendations for the future development of such systems.

Following the trial, the system will be rolled out across Greater Manchester. We are only 6 months in and there is already a statistically and clinically significant reduction in medication safety issues in recruited practices across Salford, and we see no reason why this cannot be replicated in other areas.

Who?

Richard Williams is a senior software engineer working at the University of Manchester within the Greater Manchester Primary Care Patient Safety Translational Research Centre. Richard was the lead developer on the SMASH project and ensured that the system was built ahead of schedule, virtually bug free, and has attained an availability in excess of 99.9%. In addition to SMASH, he has designed, built and implemented several other web applications and their associated infrastructure: the award-winning COCPIT for analysing patient adherence to care pathways[5-7]; an application for simulating disease progression at a population level; and e-Labs for combining cohort data for

increased statistical power. Richard is currently working towards a PhD on the gap between routinely collected" and "research ready" datasets.

References

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