

## Improving Management of Test Results That Return After Hospital Discharge

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| <b>Organization:</b>           | Indiana University   |
| <b>Mechanism:</b>              | PAR: HS09-085: Mentored Clinical Scientist Research Career Development Award (K08) |
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**Summary:** Hospital patients discharged with pending test results are at risk for medical errors related to missed results for those tests. These errors may arise from poor methods of managing test results and poor communication with followup providers. Discharge summaries, the main mode of inpatient-to-outpatient communication, remain highly inadequate at documenting tests with pending results at discharge. While the problems related to poor management of test results returning after hospital discharge is widely acknowledged, little has been done to implement and evaluate interventions to improve existing systems.

This project is implementing and evaluating two health information technology (IT) interventions aimed at improving management of tests with pending results at hospital discharge. The first is a tool, the Pending Test Processor (PTP), which automatically identifies tests with pending results at hospital discharge and incorporates these tests into the discharge summary. The second is a modification of the DOCS4DOCS® clinical-messaging tool to deliver results for pending tests to follow-up providers automatically.

This work is being conducted at Wishard Memorial Hospital (WMH), a 353-bed urban public hospital on the campus of Indiana University School of Medicine. WMH uses the Regenstrief Medical Record System (RMRS) integrated with the Regenstrief-developed Gopher computerized provider order entry system. All inpatient orders and discharge summaries must be entered electronically via Gopher. The newly-developed tool will deliver pending results to providers through the Gopher system. Dr. Were and his team are using a combination of methods to discern the specific effects of each technology on processes of care.

### Specific Aims:

- Develop and implement a computerized tool to automatically identify tests with pending results at hospital discharge and assist in the incorporation of these tests into the discharge summary. **(Achieved)**
- Evaluate the impact of this tool on accuracy of documenting pending tests in discharge summaries. **(Ongoing)**
- Modify an existing clinical-messaging program to enable automatic delivery of returning results for pending tests to the designated outpatient followup providers. **(Ongoing)**
- Evaluate how the automatic delivery of test results impacts followup providers' actions and attitudes. **(Upcoming)**

In addition to these specific research aims, Dr. Were, as part of the Mentored Clinical Scientist Research Career Development Award, will continue his long-term career goal of implementing and evaluating informatics-based interventions that improve quality of care and patient safety. Project funds allow him to acquire advanced skills through structured coursework, regular seminars, and mentoring with leaders in medical informatics, health services research, biostatistics, and implementation research.

**2011 Activities:** Dr. Were and the project team completed a randomized study to evaluate the impact of PTP on documentation of tests with pending results into hospital discharge summaries. This system is programmed to allow the Gopher system to send an HL7 trigger message to the PTP when a discharging provider signs the electronic discharge summary. Upon receiving this trigger message, the PTP identifies tests with pending results by querying the RMRS database. The tests identified through the queries are then delivered via Gopher back to the discharging provider. Data collection and analysis has been completed for 500 discharge summary reviews, each of which was reviewed by two people to ensure reliability of abstraction. The team began to develop the manuscript summarizing the study results.

Dr. Were and his team are currently modifying the PTP system and the DOCS4DOCS® tool to enable automatic delivery of returning results for pending tests to the designated outpatient followup providers, with the goal to complete by June 2012. Once the programming on the DOCS4DOCS® tool modification is complete, the team will begin the randomized controlled trial to evaluate the tool's ability to improve management of test results returning after hospital discharge.

**Preliminary Impact and Findings:** Manuscript preparation summarizing findings from the evaluation of the PTP tool on documentation of tests with pending results into the discharge summaries are ongoing.

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**Target Population:** Adults

**Strategic Goal:** Develop and disseminate health IT evidence and evidence-based tools to support patient-centered care, the coordination of care across transitions in care settings, and the use of electronic exchange of health information to improve quality of care.

**Business Goal:** Knowledge Creation

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