

Enhancing Fulfillment Data in Community Practices for Clinical Care and Research

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Summary: In ambulatory care, there are two major forms of prescription data. *Prescribing data* represent what clinicians have prescribed for patients—ideally, the *intended* medication regimen. *Fulfillment data* represent what patients have received from the pharmacy—the *actual* medication regimen. While community practices that use electronic prescribing (e-prescribing) are obtaining new access to fulfillment data, many questions about the actual accessibility, comprehensiveness, and utility of these fulfillment data for clinical care and research remain. Better-informed medication management has the potential to improve the quality, safety, and efficiency of the health care system, particularly when there is bidirectional information that includes prescribing and fulfillment data. In a fragmented medical system, providing clinicians with fulfillment data has the potential to improve coordination of care by revealing what other clinicians have prescribed for a patient. It may also help clinicians provide better-informed care by revealing whether a patient has been able to adhere to prescribed drug regimens.

This study strives to extend what occurs at the pharmacy level to include additional information on prescriptions submitted by other providers. The project team has engaged the Distributed Ambulatory Research in Therapeutics Network (DARTNet) to assess and improve the accessibility and utility of fulfillment data in community practices. DARTNet is an electronic practice-based network that includes 32 independent and geographically dispersed organizations encompassing more than 1,700 clinicians and four million patients. Member practices are being surveyed about their use of e-prescribing and the accessibility and utility of fulfillment data in their electronic health records. Fulfillment data is being extracted from five of those practices and assessed for completeness and accuracy. The efficiency of prescribing and fulfillment data to identify unintended continuation of medication and duplication of therapy is also being explored.

Specific Aims:

- Use surveys and interviews to assess the actual status, organizational plans, and barriers for full e-prescribing, capture of fulfillment data, and clinician use of fulfillment data at all DARTNet organizations. **(Ongoing)**
- Assess the data's comprehensiveness and clinical utility in five DARTNet organizations receiving fulfillment data through the e-prescribing-based process, the consent-based process, or both. **(Ongoing)**
- Develop and pilot test a patient-level report used using clinical, prescribing, and fulfillment

data to improve the management of hypertension during the clinical encounter, with subjective assessments of utility by survey and group interviews of clinicians in one DARTNet organization capturing fulfillment data. **(Ongoing)**

2012 Activities: The focus of activity was on fulfillment-data extraction, surveying DARTnet members, communicating with DARTNet coordinators to address challenges, and pilot testing the hypertension report. The extraction of fulfillment data was completed for three of the five sites. The study team prioritized the data extractions from sites that were known to have low percentages of fulfillment records. These sites represent those with fulfillment data from internal pharmacies only, versus additional data from external pharmacy fulfillment. Data extraction for the remaining two sites will be completed in 2013. One site that had agreed to participate in fulfillment data extraction was later found not to be receiving fulfillment data. However, another site that had previously declined the study team's request for data extraction later agreed to participate after the project team arranged for the vendor to perform the data validation step, consisting of chart reviews, under a blinded protocol.

As last self-reported in the AHRQ Research Reporting System, project progress and activities are on track in some respect but not others, and project budget spending is on target. The project team encountered many challenges in 2012 during the initial phase of data analysis, such as finding significant inconsistencies with fulfillment records and seeing a much greater rate of new prescriptions than anticipated. The irregularities in the data extractions resulted in an extensive and lengthy data cleaning process in which the team had to critically review the data sets and assert many critical assumptions about how to interpret the data. As a result, a 9-month no-cost extension is being applied to the project period. In order to move data extraction forward, the team developed a mitigation strategy to make the SAS code ready to run once the remaining data sets become available.

The project team continued to communicate with the DARTNet coordinators throughout the year to discuss strategies for increasing survey participation, overcoming challenges, and providing updates on project progress. Meanwhile, the distribution of the survey to DARTNet members was completed in 2012 and surveys will continue to be collected until the desired sample size is achieved. The hypertension report using clinical and fulfillment data in two practices is currently being pilot tested.

Preliminary Impact and Findings: The analytics associated with the fulfillment-data extraction uncovered some unexpected challenges in mapping the National Drug Codes (NDC) to Generic Product Identifier codes in order to classify the dispensed medications into the correct class for hypertension, dyslipidemia, and depression. The resulting unmatched NDC codes will limit the generalizability of the overall findings.

Based on data collected from various time periods, another preliminary finding was that the Centers for Medicare & Medicaid's Meaningful Use requirements appear to have had a significant positive impact on the presence of medication fulfillment data from the participating organizations.

In addition, a large percentage of practices were found to be using e-prescribing, while far fewer receive drug fulfillment data, and only a minimum number of clinicians are using these data for clinical purposes. Upcoming data analysis will help determine if drug fulfillment data, even with perceived completeness gaps and limited value for determining medication compliance, is still useful for detecting drug overlaps across providers or inadvertent drug continuation errors.

Target Population: General

Strategic Goal: Develop and disseminate health IT evidence and evidence-based tools to improve the quality and safety of medication management via the integration and utilization of medication management systems and technologies.

Business Goal: Knowledge Creation
