SUPPORTING STATEMENT

Part B

Pilot Test of an Emergency Department (ED) Discharge Tool

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Agency of Healthcare Research and Quality (AHRQ)

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B. Collections of Information Employing Statistical Methods

1. Respondent universe and sampling methods

The Emergency Department Discharge Tool (EDT) is intended for use in emergency departments (ED) across the approximately 5,000 hospitals in the United States. The EDT will be tested at three sites within the Johns Hopkins Health System (JHHS). JHHS consists of six hospitals, four health care and surgery centers, and over 30 primary health care outpatient sites.

Because these hospitals serve diverse patient population they will act as ED archetypes, allowing evaluation of performance characteristics of the EDT in settings where it is intended to be implemented. These EDs serve different populations in terms of literacy, education, payer make-up, access to follow-up, etc. Our experience suggests that the challenges to the discharge process vary across these three institutions. For example, while access to specialty follow-up might be a primary challenge in the urban academic hospital, communication with primary care physicians might be the most important issue at the community hospital.

The three sites in which the EDT will be tested include Johns Hopkins Hospital (JHH), Bayview Medical Center (BMC), and Howard County General Hospital (HCGH). These three Johns Hopkins facilities were chosen for their emergency departments and for the diverse patient population that they serve. The JHH ED sees over 80,000 patients a year. BMC is a 545-bed hospital in an academic suburban environment. The ED has 22 patient beds and treats over 50,000 patients a year. [1] HCGH consists of 267 patient beds in a non-academic community environment and has a 48-bed ED. Annually it sees 63,875 patients in the ED.[2]

EDT Testing Site	Number of beds in hospital	Number of beds in ED	Approximate number of patients seen in the ED
Johns Hopkins Hospital (JHH)	1,059	60	> 80,000
Bayview Medical Center (BMC)	545	22	> 50,000
Howard County General Hospital	267	48	> 63,000

We expect to enroll approximately ten subjects per day. Our team recently (06/10-06/11) executed a randomized controlled trial (RCT) at the three EDs (JHH, BMC, HCGH) proposed

[1] http://www.hopkinsmedicine.org/emergencymedicine/residency/hospitals/
[2] http://www.hopkinsmedicine.org/howard_county_general_hospital/services/emergency.html

here. This study, funded by the National Library of Medicine (RC1LM010424), tested re-engineering of the discharge process through an "information prescription." During this RCT, we averaged enrollment of 138 subjects/week.

Based upon historical data at our three participating sites, we expect approximately 200 patients per week to qualify as "frequent users" at these sites. Based upon available resources and recruitment, we expect to enroll and use the EDT with approximately 50 of these patients per week at each site to identify their specific risk factors and tailor interventions to their needs. Thus the EDT will be pilot tested with a total of 900 patients (50 per week/week * 6 weeks * 3 sites = 900 patients total).

2. Information Collection Procedures

Patient Level Data Collection Procedures

1. **Emergency Department Discharge Tool (EDT)** – RAs will operate in the ED between the hours of 7:00 AM and 11:00 PM Monday through Friday. During the RA's shift in the ED, he will use non-probability sampling to obtain a convenience sample of patients who present to the ED. To do this, the RA will first review the electronic medical record (EMR) of each patient who (1) enters the ED and (2) will be discharged from the ED. The RA will screen the patient's record for whether the patient made greater than 4 ED visits in the last 12 months, greater than 3 visits in the last 3 months, or greater than 1 ED visit in the last 72 hours. Patients who fall under any of these three categories are classified as a frequent user, and will thus fall into the sample of patients that the RA will approach. This step poses no burden to the participant, as this method involves no interaction with the patient.

   From there, the RA will approach patients in the ED that meet the frequent ED use criteria. The RA will introduce themselves to the patient and ask the patient if he/she would be interested in participating in this pilot test of the EDT. The RA will review the consent form with patients that qualify for the pilot and are interested in participating. This process will take approximately five minutes

   After a patient has given their consent to participate, the RA will spend an additional five minutes screening the patient with the EDT. Screening consists of determining whether the patient is uninsured, lacks a primary care physician, has a psychiatric disease, has substance dependence, or has difficulty caring for him or herself.

2. **One Month Patient Follow up Telephone Interview** – The RA will make a follow-up telephone interview with each consented patient 30 days after the patient is discharged. During the interview, the RA will use a standardized telephone script (see Attachment C). We expect this phone call to take 10 minutes.

3. **Three Month Patient Follow up Telephone Interview –**

The RA will make a follow-up telephone interview with each uninsured consented patient 90 days after the uninsured patient is discharged. During the interview, the RA will use a standardized telephone script (see Attachment D). We expect this call to take approximately 5 minutes. We expect approximately 20% of patients (180 patients) to require this call.

Qualitative Data Collection Procedures

4. **Focus Groups** - Non-probability sampling will be used to obtain a convenience sample of individuals for each focus group. A sample of the following individuals will be interviewed as part of three four focus groups to measure the feasibility, external validity, and effectiveness of the ED Discharge Tool (EDT):

    a) **EDT implementers (non-RA)** (See Attachment E)– includes social workers, case managers and nurses who have been involved with a patient participating in this pilot. 8 individuals will participate in each focus group. Three focus groups will be conducted, one for each pilot site.

    b) **Research Assistants** (see Attachment F)– includes the three research assistants who implemented the EDT in this pilot

    Research assistants and EDT implementers will derive from Johns Hopkins ED professionals and their affiliates. The focus group sessions will be audio-recorded and then referenced as needed. A note-taker will be present to collect key points.

5. **Key Informant Interviews** - Non-probability sampling will be used to obtain a convenience sample of a total of twenty-four individuals who will be interviewed. Individuals from the following samples will be interviewed to measure the feasibility, external validity, and effectiveness of the ED Discharge Tool (EDT):

    a) **Patients** (See Attachment G) **–** A convenience sample of approximately 15 patients will be interviewed .

    b) **Community Healthcare Providers** (See Attachment H) – These are community health resource provider who have been involved with a study patient and will likely include: primary care providers, specialist providers, community shelters, substance detoxification centers, home healthcare providers, psychiatry clinics, financial assistance program providers, healthcare for the homeless. A convenience sample of 6 will be interviewed.

    c) **ED Directors** (See Attachment I) – Three ED directors from the Johns Hopkins Health System will be interviewed separately for this portion.

3. Methods to Maximize Response Rates

Though efforts will be made to have the highest response rate possible, it is important to note that high response rates are not crucial to this pilot since the purpose of this pilot is to test the *feasibility* of implementing the EDT in EDs rather than the effectiveness of the EDT (which would be determined using a pre- and post-test probability design).

Patient level data

The majority of the data collected will rest in the subject's electronic medical record. Therefore, non-responses will only apply to a small number of data elements. The data elements that will require patient interview will be obtained from the patient while they are in the ED. Again, this will limit non-response.

The data element that we will not collect while the patient is in the ED is the follow-up phone call. To maximize follow-up phone call response, we will use the following strategies: 1) obtain two phone numbers while patient is in the ED, 2) elicit the time and date most convenient for the patient for follow-up, 3) flexibility in calling in the morning and evenings, 4) attempt at least 3 times per subject until they have been contacted. Using these same strategies, we have previously been able to achieve ~80% telephone follow-up rates with our patient population.

We will maximize patient participation by providing a nominal monetary incentive to participate. This incentive will be in the form of a $5 gift-card to CVS pharmacy.

Qualitative Data

The project team will request professionals within the Johns Hopkins Emergency Departments and its affiliates to participate in focus groups and the post-pilot in depth interview. Johns Hopkins is an academic institution that fosters collaboration among its associates. Therefore, recruitment will be facilitated by JH professionals' intrinsic motivation to participate in focus groups and interviews that aim to improve and better understand healthcare processes.

4. Tests of Procedures

This pilot uses methods that have not been pretested. We have previously conducted a randomized controlled trial evaluating the effectiveness of an information prescription[3] within this health system using this information system. The data elements that we collected will be similar to these data elements. The data collection procedures in this pilot will be similar to those previous ones.

[3] McCarthy ML, Ding R, Roderer NK, Steinwachs DM, Ortmann MJ, Pham JC, Bessman ES, Kelen GD, Atha W, Retezar R, Bessman SC, Zeger SL. Does Providing Prescription Information or Services Improve Medication Adherence Among Patients Discharged From the Emergency Department? A Randomized Controlled Trial. Ann Emerg Med. 2013 Apr 2.

5. Statistical Consultants

Data from this pilot will be analyzed qualitatively. Drs. Julius Pham, Albert Wu, and Ting Yang from Johns Hopkins University were consulted for their expertise in qualitative sampling strategies.