

# Understanding the patient through visualization to improve provider-patient communication in hospitals: Know your patient to personalize your communication

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## Introduction: The problem of personalized patient-provider communication

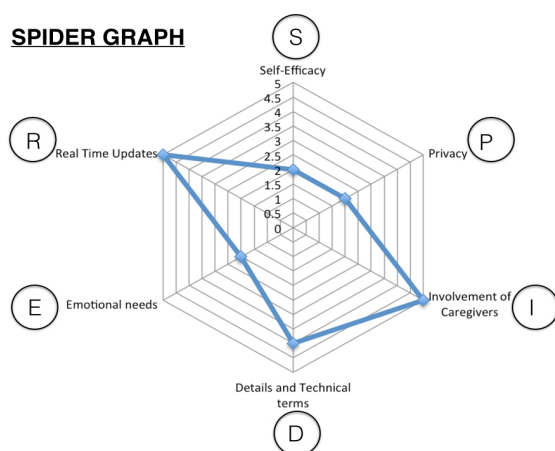
Good patient-provider communication plays a major role in hospital quality of care (1). However, good communication requires that providers know not only the patients' medical information, but also the patients' communication needs (2). Clinicians tend to have more success when tailoring their messages to best match these needs. Patients have different personalities, values, and preferences; yet, providers have no easy way to understand these differences (3). This lack of knowledge of the patient could negatively influence the patient's experience and possibly even cause harm. In our study, we aim to understand hospitalized patients' values and preferences. With this knowledge, we can create a patient profile frame that can be used to visually highlight relevant patient values to providers. These visualizations could quickly give the provider an overview of the patient's priorities and preferences. With this improved understanding, providers can provide personalized communication.

## Methods:

We conducted 28 interviews and observations of adult and child patients and their caregivers across two sites: an adult tertiary care hospital and a children's hospital. At each site, we conducted 40-60 minute semi-structured interviews with patients and their caregivers. Based on these interviews, we identified a list of possible concerns of the patient during his stay in the hospital. Then, we classified these topics into categories.

## Approach: Visualizing Patient Characteristics

Based on prior research and our interviews with hospitalized patients, we identified 7 important categories that the provider has to consider to personalize communication with a patient: Self-efficacy, Privacy, Involvement of caregivers, Details and technical terms, Emotional needs, and Real-time updates (SPIDER). We propose visualizing these characteristics in a radar graph. The graph presents to the provider how much the patient values each of these components. (Figure1). We hope these visualizations will provide a quick yet thorough view of each patient's priorities and enable effective and personalized communication. We are conducting more interviews to confirm that our framework is broad enough to cover diverse patient experiences in a hospital. In addition, we seek to confirm that these graphs will be well suited to be incorporated into provider workflow.



**Figure 1: How to use the SPIDER Graph?**

To identify the patient's preferences, the patient will be invited to answer a survey and based on his answers we can populate the SPIDER graph. This graph (on the left) shows that for Patient X, the provider has to consider that the caregivers are playing a key role in the patient care. The self-efficacy of the patient is low. So it's better to communicate with the patient in the presence of his caregiver especially when taking decisions. The patient values knowing about updates and he has a high medical literacy. This means that it is preferable to tell the patient about the last updates about his health care, and it is tolerable to use some technical words with the patient.

## References:

1. Stewart M a. Effective physician-patient communication and health outcomes: a review. CMAJ. 1995;152(9):1423-33.
2. Neumann M, Bensing J, Mercer S, Ernstmann N, Ommen O, Pfaff H. Analyzing the "nature" and "specific effectiveness" of clinical empathy: A theoretical overview and contribution towards a theory-based research agenda. Patient Educ Couns. 2009;74(3):339-46.
3. Brennan PF, Strombom I. Improving health care by understanding patient preferences: the role of computer technology. J Am Med Assoc. 1998;279(3):257-62.