

Groupware to Facilitate Interdisciplinary Team Communication

AMIA 2013 Student Design Challenge: Reinventing Clinical Documentation
Anand Allam, MD, Minal Desai, MS M(ASCP), Adriana Stanley, BS, Jonathan Wolfarth, RN-BC, MA, MS
The School of Biomedical Informatics |The University of Texas Health Science Center at Houston



Introduction

- Interprofessional communication and teamwork in rehabilitation healthcare settings are central to producing better patient outcomes¹.
- Gleaning discipline specific information from EHR documentation is difficult and time consuming. To improve interprofessional communication by maximizing discussion, rather than reporting, at group meetings, we propose a groupware tool to support information sharing across disciplines.
- Using the Turf framework for usability we propose an app-like groupware software that integrates EMRs and interdisciplinary communication through improved documentation.

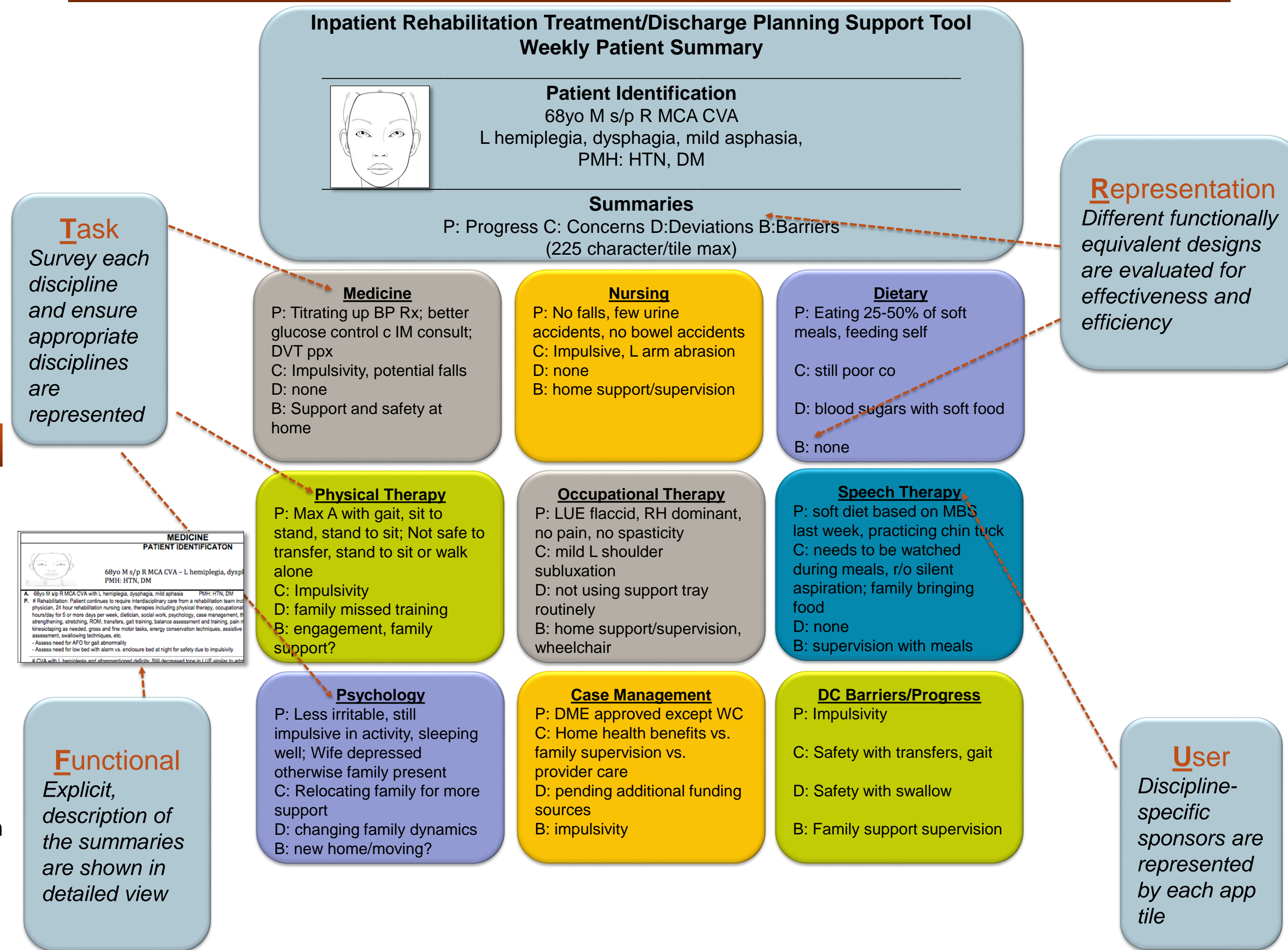
Design Setting

- Our project is proposed to be most effective in an inpatient-rehabilitation setting.
- There, weekly interdisciplinary treatment and discharge planning team meetings occur.
- The meeting time constraints allot ~15min/patient with ~15-20 patients resulting in a ~3¼ - 5 hour meeting
- The participants involved represent various departments: Medicine, NeuroPsych, Psychology, Nursing, Respiratory therapy, Physical Therapy, Occupational therapy, Speech therapy, Dietary, Social work, Case management, and others such as billing, management, leaderships.

Design Principles

- Proposed implementation includes executive sponsorship for return on investment, cost analysis, EMR vendor support, and user training for top-down success.
- The product will be developed following the TURF framework for usability (right). The evaluation plan includes selecting 10 subjects from each discipline for user testing and risk/benefit analysis of the software.

Pilot Groupware Mockup



Solution Dissemination

- To raise awareness of the tool during dissemination, the target audience (doctors, nurses, clinicians) will be introduced to a proof of concept describing the user-friendliness of the tool when preparing for the meeting and reduction of documentation time during the meeting.
- Involvement of the key stakeholders in project design from the beginning is key before repeating the process in other units of the organization.

Alternative Solutions

- Alternative solutions were analyzed in the investigation process:
- An intranet private computer network
- Internal Shared Document (ISD) program (e.g. Microsoft Office, SharePoint)
- Speech-To-Text Software system (e.g. Dragon Naturally Speaking)
- SBAR tool (**S**ituation, **B**ackground, **A**wareness, **R**ecommendation)
- Wikipedia-like collaborative website

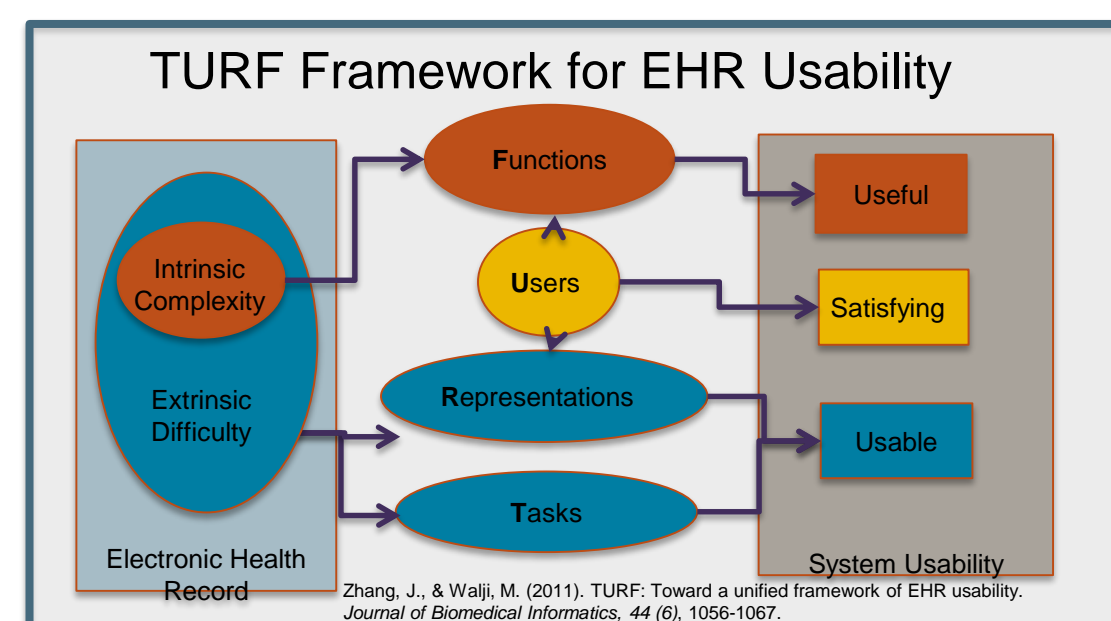
References

1. Neumann V, Gutenbrunner C, Fialka-Moser V, Christodoulou N, Varela E, Giustini A, et al. Interdisciplinary team working in physical and rehabilitation medicine. *Journal of Rehabilitation Medicine*. 2010 Jan;42(1):4-8.
2. Wiki [Internet]. [updated 2013 July 26, cited 2013 July 30]; Available from: en.wikipedia.org/wiki/Wiki.
3. Boaro N, Fancott C, Baker, R, Velji, K, Andreoli, A. Using SBAR to improve communication in interprofessional rehabilitation teams. *J Interprofessional Care*. 2010;24(1):111-114.
4. Velji K, Baker GR, Fancott C, Andreoli A, Boaro N, Tardif G, Aimone E, Sinclair L. Effectiveness of an adapted SBAR communication tool for a rehabilitation setting. *Healthcare Quarterly*. 2008;11:72-79.
5. Devine Eric G., Gaehde Stephan A., Curtis Arthur C. Comparative Evaluation of Three Continuous Speech Recognition Software Packages in the Generation of Medical Reports. *J American Medical Association*. 2000;7:462-468.
6. Zhang J, Walji M. TURF: Toward a unified framework of EHR usability. *J Biomedical Informatics*. 2011;1056-1067.
7. Faulring A., Myers Brad A. Enabling Rich Human-Agent Interaction for a Calendar Scheduling Agent. *Computer Human-Interaction in Association for Computing Machinery*. 2005:4: 1367-137.
8. Lewis, K. Eight reasons why software implementation projects fail! *Power & Gas*. 2003;Spring.

Please contact the first author via email:
Anand.allam@uth.tmc.edu

Analysis Framework

TURF Analysis Framework



Task, **U**ser, **R**epresentation, **F**unctional

Discussion

- Each discipline would make available the most pertinent summary of the patient's data.
- Effective communication will decrease duration of meetings and increase time spent on discourse of patient care.
- Ability to view notes from many disciplines at once to minimize misinformation.
- Reduction of documentation time during and after meeting returns each discipline-specific sponsor to normal workflow.