**Page ID**: **#.# Formative Usability Tests for Design Solutions (Self Alerts II) Case Study**

# Primary Content

**Title**

Enter the **Title** of the **Case Study** here (REQUIRED).

**Formative Usability Tests for Design Solutions**

**Caption Action Point**

Enter the **Caption Action Point** here (REQUIRED).

An interdisciplinary VA team uses formative usability tests to evaluate and solve a design problem.

**Brief Summary**

Enter the **Brief Summary** here (REQUIRED).

As a result of receiving excessive alerts on their Computerized Patient Record System (CPRS), clinicians and providers at the Viera/Orlando VAMC partnered with the VA’s Human Factors Engineering (HFE) Division to develop a solution.

Using the formative usability testing method, the interdisciplinary effort focused on user-tested design improvements for the existing Self-Alert system.

**Problem**

Enter the P**roblem** here (REQUIRED).

According to a national survey of 2,590 VA primary care providers, about 80 percent said:

* The number of alerts they receive makes it difficult to focus on the most important ones.
* They want to set their own alerts to only include those most relevant (Singh et al, 2013)

The numerous, unfocused alerts impaired clinical decision-making and affected patient care. An improved, policy-compliant Self-Alert system was needed to better manage alerts, boost provider efficiency, and improve patient safety.

**Objective**

Enter the **Objective** here (REQUIRED).

Using suggestions and information collected from clinician focus groups recruited to evaluate Self-Alert context of use, the team developed an initial prototype. After some early prototype testing, they realized the focus groups’ recommendations were not compatible with the existing CPRS.

Taking a new approach, with a focus on implementing changes that would work with the current CPRS, the team’s primary objective was identifying aspects of the existing Self-Alert system for design improvements.

**Approach**

Enter **Approach** here (REQUIRED).

A formative usability test method is conducted early in the design process. It requires representative users to engage a system’s interface to see how well it meets usability objectives.

For this test, the team recruited 18 providers from various disciplines and specialties. With an average of nine years of CPRS experience and six years of formal training in their respective fields, the recruits included MDs, nurses, trainers, and non-MD specialists.

Team members gathered participant responses to six scenario-based evaluation tasks regarding Self-Alert ordering and notifications. They focused on observing participant situation awareness, monitoring the recruits as they engaged the CPRS to achieve their task goals.

Each of the scenarios addressed a part of creating a Self-Alert and totaled 45 minutes to complete all six tasks.

The first two tasks addressed creating Self-Alerts. For example, the scenario read:

This patient has an abnormality on his recent colonoscopy and needs a repeat colonoscopy in six months to ensure stability. He is otherwise healthy and normally would not schedule an appointment with you for one year. Your local gastroenterology department will not let you order procedures that are more than 90 days out. You decide to create a Self-Aler t to remind yourself to order a follow-up colonoscopy procedure in six months.

Task 3 addressed making changes to an existing Self-Alert order. Task 4 asked participants to locate a Self-Alert in the notification inbox. Tasks 5 and 6 asked participants about processing Self-Alert notifications as the owner and as a surrogate.

All tasks included items that were rated on a five-point Likert scale, where 1=strongly disagree and 5=strongly agree.

The items for Tasks 1-3 and 5-6 included:

* The text in the order menu is easy to read.
* The text in the order menu is difficult to understand.
* The order menu is well organized.
* The order menu includes options relevant to my needs.
* It is easy to determine what I should do to complete the task.
* It was difficult to complete this task.
* It would be easy to make an error while completing this task.

The items for Task 4 included:

* The Self-Alert notices are easy to locate.
* The Self-Alert notices are difficult to understand.
* The Self-Alert title is well organized (order of info).
* The order menu includes options relevant to my needs.

After completing the tasks, participants were asked to complete the System Usability Scale (SUS) to assess the Self-Alerts system as a whole. The SUS includes the following items rated on the same 5-point scale:

* I would like to use Self-Alerts frequently.
* I found Self-Alerts unnecessarily complex.
* I thought Self-Alerts was easy to use.
* I think that I would need help from another person to be able to use Self-Alerts.
* I found the various sections in Self-Alerts were well organized.
* I thought there was too much inconsistency in Self-Alerts.
* I would imagine that most people would learn to use the Self-Alerts very quickly.
* I found the Self-Alerts very cumbersome to use.
* I felt noticeably confident using the Self-Alerts.
* I needed / would need to learn a lot of things before I could start using Self-Alerts.

**Outcome**

Enter **Outcome** here (REQUIRED).

As a result of this formative usability test, the team collected in-depth findings and valuable recommendations that led to enhanced system design and improved user experience.

The findings included:

* Participants struggled with creating a Self-Alert order (Tasks 1 and 2) due to difficulty in locating the service from the order list.
* Participants expressed confusion with the “Start Date” item when attempting to change a self-alert order (Task 3).
* Participants did not understand some of the alert titles in the notification view for Task 4.
* There was confusion with how to process expired and expiring self-alerts in Tasks 5 and 6, as the two behave differently. This finding was given high priority to be resolved first or emphasized in training.

Finally, according to the high SUS score findings, participants believed the Self-Alerts were useful and usable, and also indicated that they value the functionality.

**Conclusion**

Enter **Conclusion** here (REQUIRED).

The team successfully identified plausible design solutions to the current CPRS system based on participant interactions.

The results also demonstrated that when users know how to concentrate on and properly utilize valuable and accurate alert content, this type of focused, streamlined Self-Alert functionality leads to improved patient care.

As a result, they made physical changes to the CPRS interface, while targeting ramped-up training and in-tool tips as valuable, continuing Self-Alert practices. These changes were later validated using summative usability testing.

**Author**

Enter the **Author** here. (Required)

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**Sources**

Enter the **Sources** here. If there are no details, insert N/A or TBD.

* Kabel, M. (2017). Self Alerts Study – Formative Test Results PowerPoint presentation
* Kabel, M. (2016). Study of the CPRS Self Alerts Feature
* Kabel, M. and Hoover, D. (2018). Implementing Self-Alert Functionality in CPRS/VistA to Manage Future Clinical Tasks PowerPoint presentation

**References**

Enter the **Reference** here. If there are no details, insert N/A or TBD.

* Singh H, Spitzmueller C, Peterson NJ, Sawhney MK, Smith MW, Murphy DR, (2013). Primary care practitioners’ views on test result management in EHR-enabled health systems: A national survey. J Am Med Inform Assoc. 2013; 20(4): 727-735.
* VHA memo (2017) on mandatory alert reduction.

**Excerpt**

Summary text for WordPress.

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