**Page ID**: **#.# Iterating a Design Under a Time Crunch (TRT-RUE) Case Study**

# Primary Content

**Title**

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

**Iterating a Design Under a Time Crunch**

**Caption Action Point**

**Caption Action Point**

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

An interdisciplinary VA team uses a rapid usability evaluation to assess the design of a new tool for clinical support.

**Brief Summary**

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

VA Hospital clinicians requested assistance in efficiently and correctly diagnosing hypogonadism (low testosterone) in male patients. They wanted to address misdiagnoses and issues with appropriately prescribing testosterone replacement therapy (TRT).

To help the medical professionals accurately diagnose hypogonadism, an interdisciplinary VA team conducted a **rapid usability evaluation (RUE)** on a new support tool to identify possible usability issues with it.

The findings from the RUE allowed the team to iterate on the tool design to ensure that it would be helpful to medical staff.

**Problem**

Enter the Problem here (REQUIRED).

The VA clinicians were concerned with the diagnostic workups and increased rate of TRT prescriptions.

Their solution was to produce a **clinical decision support (CDS) tool** that would assist with correct prescription of TRT. A clinical decision support tool provides structure and information to medical professionals that help them make more informed decisions regarding patient care.

**Objective**

Enter the Objective here (REQUIRED).

A team of developers wanted to quickly move from rough concept to complete solution while still evaluating their design decisions at each step.

They modeled the CDS tool prototype using a VA hospital decision flow diagram central to hospital standard procedures.

For the initial prototype, the developers conducted a heuristic evaluation to identify potential issues with the first design.

Immediately addressing issues found during the heuristic evaluation, the developers promptly went through two design iterations.

After the third iteration, the team conducted a usability evaluation. Any usability evaluation allows for design team members to identify potential issues when the tool is used by actual users and can provide more informative findings than a heuristic evaluation. A RUE does this at a faster pace.

**Approach**

Enter **Approach** here (REQUIRED).

Working with experts in the field, the team started the RUE by developing fictitious, yet plausible, clinical scenarios.

The scenarios involved working up a complete diagnostic for a test patient with a fake record.

Then they recruited participants who represent the population of targeted end-users — medical professionals who typically complete diagnostic workups and prescribe TRT.

One consideration when completing a RUE is whether to complete the study in the lab or in the field. The field allows for a more natural interactions between the user and tool. However, the lab facilitates increased design team control over the interaction between the user and the tool. After some discussion, the team decided to complete this evaluation in a lab setting.

During the study, the team introduced the purpose of the test. They also explained to the participant how to think aloud. Once the participant was briefed, the team initiated the diagnostic scenario and other staff took notes while the participant completed the task.

Evaluators can accomplish the RUE with either notes recorded in real time via pen and paper or through video capture software (Russ et al., 2010). In this case, one team member served as the moderator while staff took notes. The moderator asked questions as needed during the think-aloud protocol to follow up on comments of particular note or to get the participant to elaborate on some of the statements that were made.

After the data were collected, the team pooled together their notes and generated a summary of their findings.

**Outcome**

Enter **Outcome** here (REQUIRED).

The RUE found six major usability issues with the design. These included:

* Two instances of confusing titles where the language used in the title did not match the real-world language used by the participant.
* A redundancy in the display — information about the potential treatments was listed twice.
* The treatments were not listed in a common order.

Based on findings from the RUE, the team:

* Moved exclusion criteria to the top of the menu. This removed clutter from the design. It also organized information in a more familiar way to the user.
* Concealed endocrine guidelines behind an interactive button, reducing clutter even more.

The fourth design iteration that resulted from the RUE was approved as the final design. The design team presented the design to stakeholders within the VA system.

**Conclusion**

Enter **Conclusion** here (REQUIRED).

The team used the RUE method and quickly found usability issues that were not uncovered in the initial heuristic evaluations. The heuristic evaluation identified potential issues as the design evolved but did not involve real users actually interacting with the new tool.

The RUE provided rapid feedback with end users and supported design improvements that were incorporated into the final solution.

**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.

* Arnold, T. (2010). Design and usability evaluation of a testosterone replacement therapy computerized clinical decision support tool.

**References**

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

* Russ, A. L., Baker, D. A., Fahner, W. J., Milligan, B. S., Cox, L., Hagg, H. K., & Saleem, J. J. (2010). A rapid usability evaluation (RUE) method for health information technology. In AMIA Annual Symposium Proceedings (Vol. 2010, p. 702). American Medical Informatics Association.

**Excerpt**

Summary text for WordPress.

An interdisciplinary VA team uses a rapid usability evaluation to design a new tool for clinical support.