

How can a user centered design process help to design a tool to support PCPs when using an Alzheimer's Disease Blood Biomarker Testing Pathway?

The literature shows that PCPs face challenges when diagnosing Alzheimer's Disease (AD)

Need 1: Educate PCPs on appropriate patient selection for blood biomarker (BBM) testing

Need 2: Support patients in shared decision-making about BBM testing



Need 3: Address provider and patient concerns about communicating an AD diagnosis

Through user centered design, we addressed the needs identified through a rigorous development process shown below:

Background
Blood biomarker tests (BBMs) for Alzheimer's disease (AD) can improve diagnostic accuracy and streamline patient referrals. However, the literature identifies several challenges to Primary Care Providers (PCPs) using BBMs: defining the benefits and appropriate use of testing, supporting patient communication and shared decision making, and interpreting and disclosing results. User-centered design (UCD) is an approach to improve healthcare processes that engages end-users to identify workflow challenges, knowledge needs, and decision points. By grounding tool development in the perspectives of practitioners, UCD can facilitate solutions that are actionable and implementable in real-world clinical settings to support the use of AD blood testing.

Methods
Based on UCD methods, we conducted five focus group sessions with PCPs to co-design a pathway tool to support decision-making and results communication about AD blood testing. Together with PCPs we determined overall design goals that the tool should meet, which were then translated into specific design targets. Design targets are the specific elements of the tool that together achieve the overall goals of the tool. PCPs suggested adaptations and provided feedback in sessions, and we qualitatively analyzed session transcripts to ensure targets corresponded with components in the tool.

Visual Development
Based on data derived from the focus group sessions, the Sankey diagram (coded with R) depicts the process by which our three design goals were translated into a decision tool feasible for clinical practice through various iterations of different design targets.

Results
We enrolled 12 PCPs from Family Medicine, Internal Medicine, and Geriatrics who participated in 5 focus group sessions. PCPs identified design goals, or high priority areas the pathway should address: 1) defining the benefits and appropriate use of testing; 2) providing information to share with patients to support shared decision-making; and 3) enabling comprehensive results communication. Through an iterative co-design process we translated initial conceptual ideas into a three-component tool: a clinical pathway, a patient conversation aid, and results communication templates. The evolution from initial proposals to final tool design reflected substantial PCP input, with modifications addressing the research team's design goals being incorporated and low-utility suggestions deferred. PCPs' qualitative feedback was positive on the tool's ease of use and practicability.

Conclusions

- **User-centered design methods can be used to engage PCPs in co-creating a multicomponent tool to support AD blood biomarker testing in primary care.**
- **The iterative design process ensured that the tool addresses anticipated real-world clinical situations and can incorporate best practices.**
- **PCPs found the tool intuitive and practical for integration into clinical workflows. To move towards clinical implementation, the tool will next be tested in a clinical simulation study.**

References:

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