

Developing a Lung Health Promotion Toolkit for American Indian and Alaska Native People Through Human Centered Design

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BACKGROUND

American Indian (AI) and the Alaskan Native (AN) communities have the highest smoking prevalence across racial and ethnic groups in the United States. The smoking rates are especially high for adults over age 45, and lung cancer is the leading cause of death. Dedicated and adapted approaches to lung cancer screening (LCS) are rare, and prevention programs rooted in AI/AN community-centered learnings and values are limited. The current research directly addresses that gap by partnering with an Urban Indian Organization and AI/AN community members living in in the Pacific Northwest of the United States to develop tools and resources for primary and secondary lung cancer prevention using human-centered design (HCD).

METHODS

This work is part of a larger, multi-phased, mixed-methods study to develop AI/AN community-centered approaches to LCS and commercial tobacco cessation.

Phase 1: A nationwide sample of multidisciplinary care providers and researchers was interviewed to understand current and best practices of LCS and commercial tobacco cessation in AI/AN patient populations.

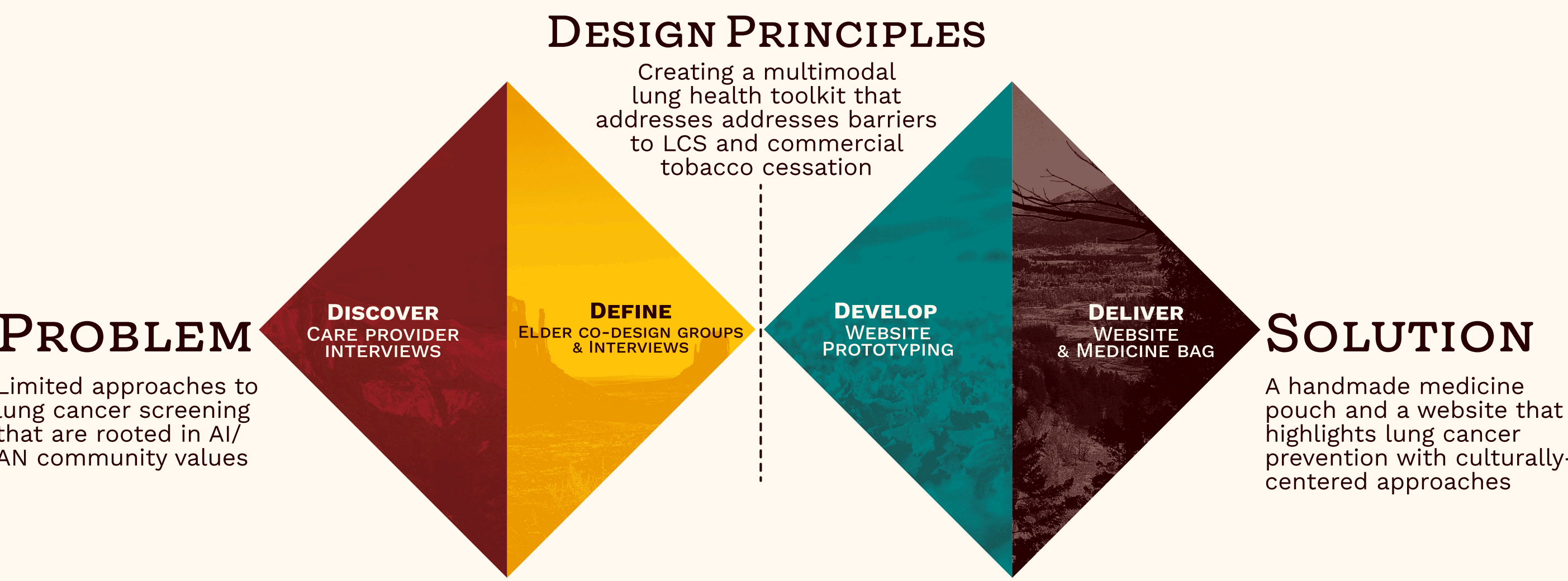
Phase 2: HCD frameworks were used to engage AI/AN elders to deepen the understanding of the barriers and to define viable solutions. An initial competitive analysis was completed, after which a total of 16 participants were involved in the HCD activities. Participatory co-design session (n=14 participants), a participatory workshop with the research team (n=2 participants) and individual in-depth interviews (n=4) were conducted from July to December 2025 with urban AI/AN elders (55-74 years). The research and design process is grounded in participants' lived experiences and stories regarding lung health and tobacco use.

SPECIAL THANKS TO



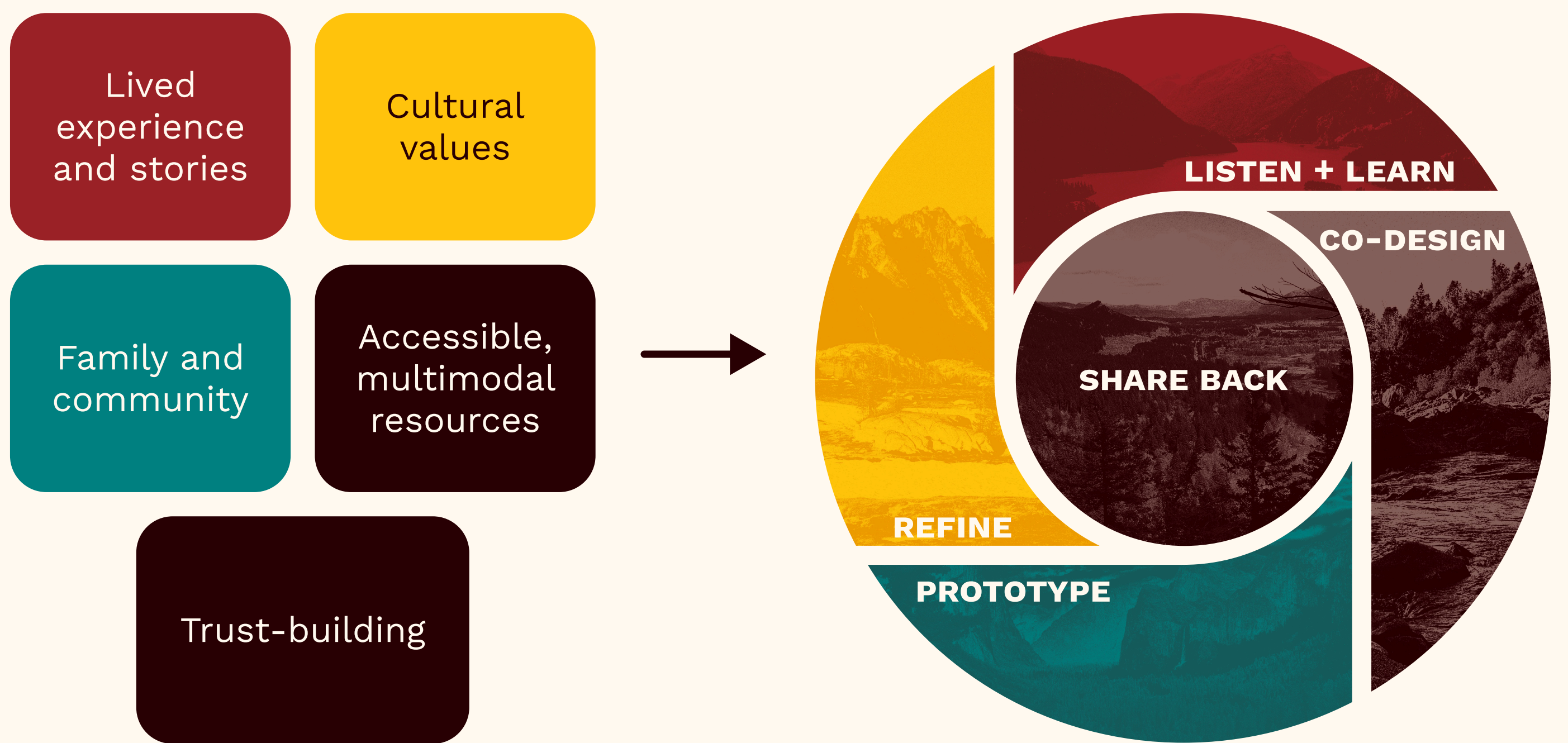
HUMAN CENTERED
DESIGN & **ENGINEERING**

COMMUNITY-PARTNERED HCD PROCESS



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LUNG HEALTH TOOLKIT PRIORITIES



LaFrance, J., & Nichols, R. (2009). *Indigenous evaluation framework: Telling our story in our place and time*. Written for the American Indian Higher Education Consortium, AIHEC.

FINDINGS/RESULTS

Provider interviews and HCD activities with urban AI/AN elders identified gaps in awareness, access, and trust around commercial tobacco cessation and LCS. By analyzing these gaps, we found four themes that were translated into design priorities:

- 1. Stories + cultural values:** The toolkit should be grounded in empathy, Elder stories, and inclusivity that allow users to feel a human connection.
- 2. Availability + accessibility:** The toolkit should be available in physical and digital forms and readily available where people tend to gather, easy to share, and easy to access.
- 3. Screening pathways:** The toolkit should provide tools for decision-making, support for lung cancer screening, and support for caregivers for those with tobacco-related lung disease
- 4. Trust-building:** This toolkit should be a trusted resource that reduces fear around lung cancer screening, explains medical terms in user-friendly and simple language, and has reliable and vetted medical information.

These principles, as well as design participation with urban AI/AN elders, informed the two physical components of the toolkit: a physical Medicine pouch/sacred healing pouch designed and produced by a member of the community and a linked website for information and story sharing.

CONCLUSION

This research demonstrated that community-partnered HCD methods can produce culturally grounded design principles for lung cancer prevention resources in urban AI/AN communities. The four principles identified will guide further toolkit development and pilot testing in the next phase. Throughout this process, AI/AN community members have been active partners in shaping both the research direction and the resulting solutions. This work emphasizes that when communities build and own the research process, the resulting health resources are more likely to be culturally resonant, trusted, and widely adopted.

This work was funded by a grant from the Bristol Myers Squibb Foundation.

