

Executive Summary

The purpose of our partnership with the UHN OpenLab was to discover the barriers involved with automating the sporadic release of clinical practice guidelines (CPGs) into the Innovate Guidelines Application (IGA). The problem is considered wicked—interlocking challenges cannot be addressed by a single solution. Accordingly, the goal was to explore the barriers of stakeholders and specialization groups, general guideline issues, and the considerations of healthcare professionals and public perception. An initial literature review was conducted to discover unidentified problems before a first draft of the systems map was created. Subsequently, connections were formed across problems and each was categorized based on degree of complexity. A white paper was drafted to complement the systems map, explain the problem clearly, and highlight areas to be further explored. The recommendation brief outlines where further action could be taken. Key findings of the white paper include that guideline standardization and the use of automation were significant complications with the project. The lack of standardization between guidelines makes categorizing them tedious as there are few common elements or formats. This problem is further perpetuated by new guidelines, which continue to be made without commonality between producers. A recommendation for the UHN OpenLab team is the use of automation software to sort pre-existing guidelines efficiently. Additionally, there should be a push for a checklist screen to generate commonality between future guidelines. This list for guideline producers would act as a completion and quality control marker while still allowing freedom in design and format.

Course Concept #1: Intersectionality

As defined by Kimberle Crenshaw in her Ted Talk, intersectionality is the simultaneous impact of interconnected problems felt by individuals. Kimberle Crenshaw cited the example of Emma DeGraffenreid who was discriminated against during the hiring process for being both female and African American. Crenshaw explained that strategic plans in the workplace were implemented to protect marginalized individuals, but failed to consider intersectionality which excluded people with multiple marginalized identities. For our project, being aware of intersectionality served as a framework to develop a holistic understanding about the complexity of the issues. Rather than strictly considering the intersectionality of individuals, we applied the concept to the issues preventing the implementation of IGA. Our wicked problem involved multiple interworking barriers which exacerbated the complexity of the issue. Using an intersectional lens, we considered connections between multiple dimensions of barriers in the guideline implementation and dissemination process: guideline standardization issues, issues about target audience, and the perceptions of stakeholders involved. Each group of barriers synthesize with one another; therefore, solving one aspect of the wicked problem does not necessarily translate into favourable outcomes. We used intersectionality to inform our deliverables by taking into account a wide breadth of topics when performing scholarly literature review for our systems map, rather than narrowing our perspectives on known concepts within guideline dissemination. Our literature review was used to inform connections made between problems in our systems map, which translates to identifying leverage points for the recommendation brief to expand upon.

Course Concept #2: Perspective taking

Perspective-taking is the process of considering the lived experiences and perceptions of others which inform their worldview. Creating the systems map required taking the perspective of stakeholders such as healthcare professionals, guideline writers, politicians and legal councils, investors, and patients. For each stakeholder, we applied the 4 steps of perspective-taking. We set aside our goal of finding solutions to engage with their perceptions of guidelines and technology, ideating about how they perceive their roles, their hesitations related to this project, and the barriers which prevent them from taking action. We hypothesized about these perspectives based on our initial research, then continued to observe and revise based on our continual reiterations. Only through exploring all these individuals' involvement through societal role-taking could we grasp a complete picture of guidelines and the implications of our app. In particular, fleshing out the perspective of hospital administrators introduced us with connections regarding funding, unclear policies, the time needed for the adoption of the app, and training considerations. Perspective-taking was implemented to ensure that groups were not being misrepresented or given bias. With this approach, our white paper was specifically framed to consider the perspectives of individual users and healthcare providers. By collecting their perspectives, we can ensure that the solutions implemented can benefit as many stakeholders as possible without conflicting with issues outlined by our systems map. Perspective-taking is an ongoing process that will be pivotal in designing, deploying, and revising the app to include as many use cases and accessibility options as possible.

Course Concept #3: Science Literacy

Science literacy refers to the ability of individuals to communicate, understand, and critically evaluate scientific information. Andrew Zwicker's Ted Talk identified the importance of being scientifically literate when making informed decisions. This led to our careful selection of credible literature, allowing informed decisions to be extrapolated from our deliverables. In addition, according to the "Critical Science Literacy" article, research can be conducted with inherent bias leading to potential contradictory findings. Furthermore, scientific misinformation can propagate without caution. Translating the concept of science literacy into our project involved being aware of potential misinformation when conducting literature review as well as potential inherent bias when exploring topics. As a result, scholarly literature review was critically conducted without preconceived notions. The impact of this approach allowed us to select appropriate literature and to explore various aspects of our systems map further with an evidence-based approach. From the same article, we adopted their ideology in getting the public engaged in discussion about complex scientific topics, which involves using simpler language and explaining concepts clearly. By applying these concepts, we deliberately framed our white paper with two audiences in mind: the UHN OpenLab researchers who want to change the system and the non-scientists stakeholders who can make the changes. With the application of science literacy, not only did our approach ensure the credibility of our findings, it promoted public engagement to close gaps in the understanding about our wicked problem.

Future Directions

Through our work with UHN OpenLab, we achieved our goal of exploring the problems related to developing the IGA. We found that the introduction of an interdisciplinary team needs to be further explored as an option for the app's development. As such, we propose that UHN OpenLab should begin recruiting physicians, patients and civil servants with unique perspectives to answer relevant questions that can help with facing real life issues. Additionally, the project would benefit from adoption of a Conference on Guideline Standardization (COGS) checklist to screen for CPGs. The checklist will help with implementation of innovative guidelines and help future developers to produce high-quality guidelines. Application of these recommendations would serve to improve the quality of service the app provides. The addition of a checklist has implications for the development of CPGs overall and the propagation of high-quality guidelines.